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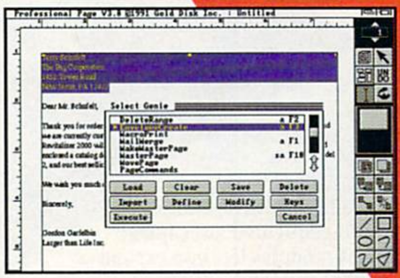
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DSS Stretches the outer limits of 8-bit sound

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- Analyze voice patterns and stereo separation.
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- Remove "pops" from old phonograph recordings.
- Create custom instruments and sound effects by collecting and/or modifying pre-recorded instruments, voice, or sounds from any source, and use them in your own compositions.
- Save your sound and music to disk or send it out via modem for replay on any Amiga.





Check out these unparalleled features

✓ AmigaDOS 2.0 compatible; written in assembly language.

✓ Multi-tasking operation.

✓ 68020 and 68030 compatible.

✓ Comprehensive tutorial manual helps even beginners get started right away.

✓ Intuition-based graphic interface makes operation easy.

✓ MIDI-in capability.

✓ Direct interface between sequencer and editor.

✓ Hold 31 sound samples in memory at once – all shown on screen so they are easy to manipulate.

✓ Effects and processing capabilities include echo, mix, filter, re-sample, sound data inversion, playing sounds backwards, loops, fade-in/fade-out and more.

✓ Manipulate sound samples in real time, as you listen.

✓ Create sampled instruments with 1, 3 and 5 octaves.

✓ HIFI recording for highest quality playback.

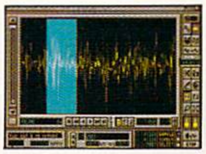
✓ Controls for faster/slower playback and filtering high frequencies during playback.

✓ Load and save samples, songs and instruments in multiple formats.

✓ Multiple effects for each note.

✓ Stereo and monophonic operation. Also convert mono to stereo or separate stereo.

✓ Auto-playing music modules.





✓ Real-time oscilloscope and spectrum analysis.

✓ Real-time reverberation.

✓ Graphic editing of wave forms through easy-to-use functions, including zoom in/out and precision controls for position, frequency and amplitude.

✓ Draw sound waves freehand using the mouse.

✓ Direct editing of individual sample numeric values.

✓ Maximum recording speed of 51,000 samples/second in stereo.

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CHIEF CONCERNS

To all you loyal Amiga owners:

We owe you one!

A FEW MONTHS back, Commodore sold its three-millionth Amiga. I don't remember any parades, but I did flash a little smirk, knowing that three million people are mousing around with the coolest computer I've ever seen.

If you follow the stock market, you might also have heard that Commodore has been the darling of Wall Street. Its stock has posted unbelievable gains, despite this unbearable recession we've been having. And some analysts think the stock is still far from its peak.

You know what else you deserve? You deserve the best products Europe and the rest of the Amiga world have to offer.

The third bit of good news is the new-found respect for the Amiga, which is now generally acknowledged as the technical leader in video, animation, and multimedia. This image comes from ground-breaking third-party products and the efforts of thousands of Amiga owners, who have written letters, demonstrated their systems to death, and stood up for a great machine.

You've done your part, I'd say. I've seen your impact on every publication I read (except *Mad*) and every computer journalist I badger. We all owe you one—Amiga magazines, third parties, and most especially Commodore.

We owe you even better Amigas, faster, and with more colors, stability, and sound, at ever lower prices. We owe you professional magazines that respond to reader needs. That's why we do surveys every month, consume every word in every letter, and talk to dozens of readers each week. And we're still not doing enough.

We in the magazine business also owe it to you to be honest. To be big boys and admit our mistakes, and do our best not to repeat them.

Third parties owe it to you to keep innovating and to continue developing solid products. 1991 was a superb year for products. We covered DCTV, Firecracker, GVP's Impact Vision, Progressive Peripherals' Blender, and a slew of 040's. This year we want even more. And we need it, because innovation is the future of the Amiga.

Commodore owes you thanks and a continuing commitment to the system. Our credibility is a wedge into the door of the mainstream market. With new products and an approach focused on verticals with well-packaged solutions, the Amiga can make it in corporate America, small business, and the home.

It will take investment, commitment, and savvy, all of which you should demand. This means that Commodore must maintain healthy product development, improve its distribution, and help us make the Amiga a household name. I think that it will.

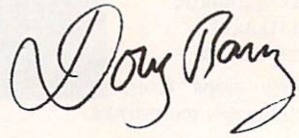
You know what else you deserve? You deserve the best products Europe and the rest of the Amiga world have to offer. I've travelled to Europe and seen dynamite products that never reach our shores. In the U.K., there are killer games that never grace our systems. In Germany, there are unique, sometimes bizarre products that never make it to the USA.

We've seen that these products can work here. SCALA, developed by a great team in Norway, and Real 3-D, developed in Finland, are fine packages that are doing quite well here. How many others are we missing?

We need a new company whose sole purpose is to integrate European and US markets. By making it easier for US products to make it overseas, our vendors clean up and use some excess cash to develop more great stuff.

And by translating, marketing, and supporting overseas products in the US, we get a broader selection of titles and a more appealing system for the masses.

You, the readers of *AmigaWorld*, have done your part. You have supported the market and stood up for the machine, and your innovative work has made our readership the envy of the computing world. Now its our turn to pay you back. ■





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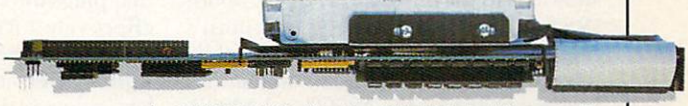
Plus, the G-Force 030 Combo plugs into your A2000's CPU slot, leaving all your normal expansions slots open and free for other uses!

It's no wonder we say the G-FORCE 030 Combo is the *Must Have* Add-on for your A2000.

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OVERSCAN

News, New Products and Networks

The World of Amiga: Chills and Thrills

TORONTO, ONTARIO—Roughing it in Canada's fluctuating climate—both environmental and financial—Amiga fans gathered in Toronto once again for the annual winter World of Amiga. Although inclement weather made traveling difficult at times, spirits were not dampened, and both users and developers came together with enthusiasm.

AmigaWorld's filming of show attendees for possible inclusion in the epic "History of the Amiga" video notwithstanding, the greatest excitement at the show was in ***Great Valley Products***' booth (RS# 115). Clearly, the busy booth's most notable attraction was the highly-touted **Phone Pak** fax-mail system, an internal board for the A2000 and A3000.

Phone Pak's list of features reads like an overworked secretary's wish list: Multiple phone-line support, the ability to receive and send fax transmissions, and options to create telephone mailboxes for fax and voice messages. If that's not enough, you can also record and play voice messages or view faxes on screen while listening to corresponding voice messages.

Phone Pak's software provides a point-and-click environment that lets you create a database of phone numbers and names. Connected to your Amiga, a standard fax machine doubles as a scanner. Best of all, several Amigas equipped with these multifunction boards can be used to create a multilevel, low-cost phone-mail system that would be the envy of any mismanaged government agency.

Not even the hard-of-hearing could miss GVP's **Digital Sound Studio** ($125), an eight-bit, MIDI-compatible sound system that saturated the show's din with high-decibel blasts of sound and voice samples. Its hardware is a small cartridge that plugs into the Amiga's parallel port, effectively turning it into a four-track MIDI sequencer with MIDI keyboard support. Versatile, user-friendly software lets you record at high sample rates and edit, manipulate, and play sound files.

Also on the hardware aisle, ***ICD*** showed off its new **AdSpeed/IDE** for the A500. A combination device, the unit provides an auto-configuring, autoboot interface for standard IDE hard drives, as well as a 14-MHz accelerator that doubles a stock system's normal clock speed. AdSpeed/IDE is available in three configurations—sans hard disks—costing from $359.96 to $389.96. (RS# 116.)

Datamax (RS# 117) was thinking

Continued on p. 14.

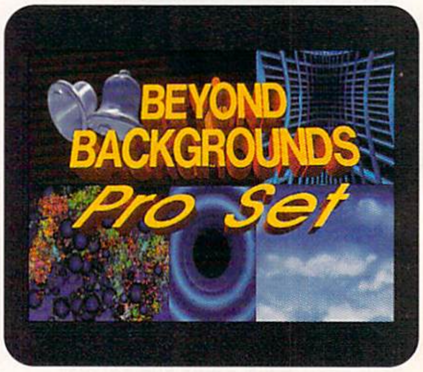
Four Thought

Need help getting a handle on DeluxePaint IV? ***Saddleback Graphics*** offers **The DeluxePaint IV Video Guide**, a tour through the program's new features, including the menu structure, Metamorph, Translucency, HAM mode, the new Range requester, LightTable, the Animation Control panel, and the Palette Mixer. A companion tape, Advanced Techniques with DeluxePaint IV (tapes are $29.95 each), demonstrates various tips and tricks for combining tools for dramatic results. (RS# 103.)

For disk-based assistance on all the new features and more, look to **The Buddy System for DeluxePaint IV** ($49.95, ***HelpDisk***). A two-disk set with a hypertext interface, the multitasking software promises real-time audio-visual demonstrations, speech narration and captioning, beginner to advanced-level tutorials, and reference for tools, modes, effects, and techniques. Users of Soft-Logik's PageStream, Impulse's Imagine, and AmigaDOS can get help from Buddy System, too. (RS# 104.)

Picture This

When you need to go one step further for your backgrounds, try **Beyond Backgrounds Pro Set** ($99.95). This ***Frost-Byte Systems*** package includes ten disks of 24-bit IFF overscan images for use as backdrops in video productions, multimedia applications, and business presentations. (RS# 101.)



Background check: The Pro Set from FrostByte.

Make it MIDI

You can use ***The Blue Ribbon SoundWorks***' **PatchMeister** as a stand-alone MIDI patch librarian. You can also integrate it into Bars&Pipes Pro and view windows from both programs on the same screen. PatchMeister offers an array of point-and-click bank-editing options, unlimited banks and libraries, and such MIDI options as snapshots, set-up files, and SysEx attachments. You can also attach comments and search key.

Also designed for use with Bars&Pipes Pro is the new **Triple Play Plus** MIDI interface ($189). The unit is named for its three separately addressable MIDI-out ports, which allow for 48 simultaneous MIDI channels. Now that's a lot of play! (RS# 106.) ►

To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 89.

YOU'LL BUY IMPACT VISION 24 FOR ONE VIDEO NEED AND FIND YOU NEED IT FOR EVERYTHING VIDEO



Introducing the IMPACT VISION 24™ from GVP
The All-In-One Video Peripheral for the A3000 and A2000

If you're into video, IMPACT VISION-24 is truly a dream come true for your A3000 or A2000. It is the first multi-function peripheral specifically designed for the A3000's video expansion slot.
With the optional A2000 genlock slot adaptor kit, it also perfectly complements and enhances the A2000.
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▶ **Separate Composite and Component Video (RGB+Sync) Genlocks.** RGB genlock operates in the digital domain, for digitally perfect production studio quality mixing: no color bleeding, no ghosting, no artifacts . . .!

▶ **1.5MB Frame Buffer.** Display 24-bit, 16 million color images on your Amiga monitor. On a multi-sync monitor, you can even display 16 million color images in non-interlaced mode!

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▶ **Flicker-Eliminator.** Duplicates and enhances the A3000's display enhancer circuitry. It even de-interlaces live external video! A must for any A2000 owner. Ask about our A2000 "genlock slot trade-up" program (in case your genlock slot is already used by something less exciting!)



▶ **Simultaneous Component Video (RGB) Out, Composite Video Out and S-VHS Video Out.** Now, anything you can see on your Amiga monitor can be recorded on video tape, including animations, ray-traced 24-bit images and more!

▶ **Picture-In-Picture (PIP) Display.** Freeze, resize, rescale and/or reposition live incoming RGB video just like any workbench window at the double click of a mouse or the pressing of a "hot key". With a multi-sync all this can even be in rock steady de-interlaced mode. Unique "reverse-PIP" feature, even allows you to place a fully functional Amiga workbench (or other application) screen as a SCALE-ABLE (shrunk down!) and re-positionable window over full-screen live video.

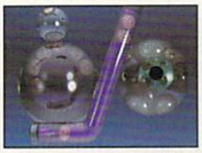
▶ To make sure you can take full and immediate advantage of every feature of your new *Impact Vision 24* video-station, we even include the following software with every unit:

- **Caligari™-IV24.** An exclusive version of the leading broadcast quality, 3-D modelling and rendering program. Use your imagination to model 3D, 16 million color, scenes. Use your digitized video images as textures to wrap around any object! The mind is the limit!
- **SCALA™-Titling.** Easy-to-learn, video titling package complete with lots of special fonts and exciting special transition effects. Turn your Amiga into a character generator.
- **MACROPAINT™-IV24.** A 2D, 16 million color paint program that lets you have fun creating or manipulating any 16 million color, 24-bit image.





- **Control Panel.** Provides full software control over all Impact Vision-24's numerous features. Use your mouse or simply press a (configurable) "hot key" to activate any feature.





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I Dream of Pro Page

More than 30 automatic functions, called "Genies," facilitate document production in the latest incarnation of ***Gold Disk***'s **Professional Page** desktop-publishing program (v. 3.0, $295). Page Genies allow for push-button generation of page layouts in any of six styles. Easy envelope addressing, automatic mail merge from a database, and grid and table creation are options with Function Genies. If you want more automatic functions than those that come with Pro Page 3.0, create your own by using the more than 300 included ARexx commands.

An Undo feature, enhanced color separation, and under-color removal algorithms are all part of Pro Page 3.0. So are auto-titling for the output of larger pages, text-import filters for popular word-processors, and a hot link to Gold Disk's Pro Draw for easier shuffling of stuctured graphics. For more flexible font manipulation, you can scale in 0.125-point increments. You also now get five more Compugraphic fonts to work with. (RS# 107.)



OVERHEARD

Newer Technology recently announced its intention to release The Model 10 Amiga, a portable system. The system is scheduled to offer monochrome or color LCD display, a single 3.5 floppy drive, 2MB of RAM, and a standard 86-pin bus. The Model 10 promises to weigh in at 3 to 6 pounds (depending upon peripherals and configuration) and measure 2×12×8 inches.

Up Your Score

Scoring high on standardized tests frequently depends not only on your knowledge of the subject matter, but also on your test-taking savvy. Help and practice are on the way for the Graduate Record Exam (GRE) in the form of **StudyWare for the GRE** ($49.95), a joint effort of ***StudyWare Corp.*** and Cliff Notes.

Through hundreds of questions, four full-length exams (two StudyWare and two Cliffs), and on-screen explanations for both correct and incorrect answers, the software covers 22 GRE topics. If you need extra help, you can access the on-line hints and glossary that are provided. The computer scores the tests for you and lets you print out progress reports and charts to track your preformance. In addition, each package comes with a copy of Cliff Note's *GRE Preparation Guide*. (RS# 111.) ►



ON-LINE SCAN

By Tim Walsh

You can blame your aging hard-disk controller, the floppy disks you bought at a yard sale, or your youngster's errant behavior. No matter: Your Amiga's read/write media has a finite lifespan.

Over the years, I've shared laughs with Amiga technicians and fellow editors when recounting tales of terrible hard-disk corruption and mangled files. The only time a disk crisis is humorous, however, is after the fact. There is nothing funny at the moment you inadvertently damage much-needed files.

While experience teaches you how to recover lost files, no one is immune to accidentally wreaking unspeakable havoc upon the delicate workings of an Amiga device. Powerful directory programs such as Progressive Peripherals' DiskMaster and INOVAtronics' Directory Opus sometimes act as double-edged swords. Many hapless beginners have undoubtedly used these utilities to point and click precious files into oblivion in a matter of seconds.

Luckily, your modem can help. In fact, one compelling reason for joining a network is to find useful public-domain utilities designed to save your sanity and files when things go awry. (Most of these gems complement rather than replace valuable directory programs.)

For accidentally deleted files, Amiga users usually make do with Commodore's DiskDoctor. While the program salvages mangled or deleted files, it sometimes renders other files on the offending disk unusable. Two DiskDoctor alternatives are DiskSalv (GEnie Amiga Library 4, file number 7051) and FixDisk (GEnie Amiga Library 4, file number 6200). I've salvaged lots of deleted, corrupted, and damaged files using DiskSalv. I encourage you to keep FixDisk handy, though, in case you encounter a file that DiskDoctor or DiskSalv cannot revive. Once the data is back on the disk in a readable format, CompuServe users can venture to library 9 in the AmigaUser area and get a copy of Disk Test (AmigaUser Library 9, filename DT.LZH) which can verify the integrity of floppy disks.

Do you need to quickly locate a specific file on a hard disk or other high-capacity device that's packed with a couple of partitions, multiple levels of directories and subdirectories, and scores upon scores of files? Log on to the Portal network and get a copy of Joe Rattz Jr.'s FileLocator (Amiga Zone Library 8, filename FILELOCATOR.LZH). Its Intuition-based interface and liberal use of wild cards makes it a pleasant, easy-to-use program for finding those seemingly long-lost files.

Wondering if you have duplicate files on your hard disk? Get a copy of LaMonte Koop's DupScan program (Amiga Zone Library 8, filename DUPSCAN.LZH). I thought I kept a tight rein on my archival file collections, and was surprised when DupScan revealed 74 duplicate files in one partition!

No utility is more important than a hard-disk backup program; regularly backing up important files onto separate media is essential. While demo versions of commercial back-up programs abound on the nets and HDBackup is available as part of Workbench 2.04, no public-domain program is better suited for that time-consuming task than MRBackup Professional, version 1.0, by Mark R. Rinfret (GEnie file number 11231, library 4). If you are grinding away with two or more floppy drives on your Amiga, other suggestions are the freely distributable DFC5 by Tom Rokicki and Sebastiano Vigna (BIX Amiga.user library, filename DFC5.LZH), SuperDuper 2.0 (GEnie Amiga library 4, file number 12910), and TurboBackup by Steffen Stempel and Martin Koop (BIX Amiga.user library, filename Turbob100.LZH). All three are heavily downloaded high-speed disk copiers that take the drudgery out of copying floppy disks.

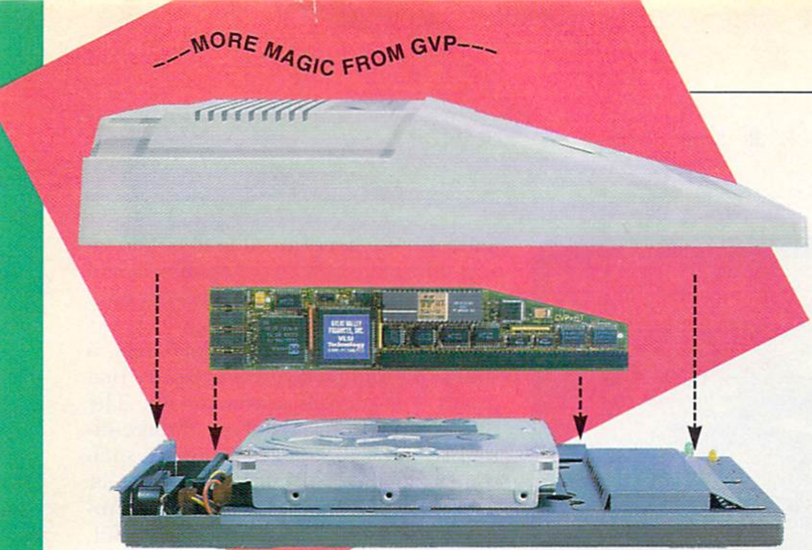
If I've whetted your appetite for the ability to download these files, you can contact the networks to establish an account:

BIX
One Phoenix Mill Lane
Peterborough, NH 03458
800/227-2983

CompuServe
PO Box 20212
5000 Arlington Center Blvd.
Columbus, OH 43220
614/457-0802
800/848-8199

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401 North Washington St.
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Check out these unequalled features:

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- A2000™ Hard Drive Performance. The A500HD8+ uses the same Custom DMA VLSI Chip and FAAASTROM technologies as our top-selling, high performance, Series II™ A2000 SCSI controllers.
- Up to 8MB of User-Installable Internal FAST RAM expansion (SIMMs).
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PLUS, now we offer something NO OTHER HARD DRIVE SUBSYSTEM can, an optional plug-in 16Mhz 286 "PC" Emulator!

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Our new GVP/PC286 emulator module is the first A500 peripheral specifically designed to be plugged into our unique internal "Mini-Slot". Unlike other 286 PC emulators, this one fits right inside your A500HD8+ housing! So installation is a snap and there's no need to open and dismantle your A500™ and run the risk of VOIDING YOUR Computer's WARRANTY.

In fact your warranty worries are over, because the A500-HD8+ as well as the optional GVP/PC286 emulator module are now warranted for 2 FULL YEARS!!

The GVP/PC286 "Mini-Slot" module features:

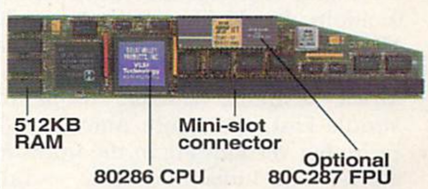
- Runs MS-DOS (V3.2 or up), Microsoft Windows™ and literally thousands of PC applications. NOTE: MS-DOS Operating system is NOT Included.
- 16Mhz 80286 CPU. Up to 15 times faster than IBM's original PC!
- Complete Hercules™, CGA, EGA/VGA (monochrome) and T3100 video emulations. MS-DOS applications can use the A500's™ built-in parallel and serial ports transparently.
- Use the A500's floppy drive(s) to read/write MS-DOS floppies.
- Let's your A500 run MS-DOS and AmigaDOS Applications Concurrently!!
- 512KB of On-board Memory (RAM) for exclusive use by MS-DOS. Transparent access to the A500's memory for MS-DOS applications requiring more than 512KB of memory!
- Socket for optional 80C287 (CMOS) Floating Point Unit.



PLUS, your Series II A500-HD8+ matches your Amiga™ 500's good looks line-for-line and curve-for-curve.

So... Be Smart, before you buy anyone else's A500™ hard drive or RAM expansion system, ask the question: "Does It Have a Mini-Slot"? Why settle for anything less?

GVP/PC286 MODULE



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Where Cameras Fear to Tread

COLLEGE PARK, MARYLAND—When the Central Intelligence Agency wanted to model a Tomahawk cruise missile in flight, it called on Virtual Image Labs, a company that helps clients communicate ideas with computer graphics, animations, and video. To do the job, Virtual Image Labs turned to the Amiga.

At the core of the company's graphics lab are 15 Amiga systems—A2000s with 33- and 50-MHz accelerators from Great Valley Products, plus a couple of '040-charged A3000s. Four of the A2000s are equipped with Video Toasters (NewTek) and one with a Firecracker (Impulse). These systems can be used for video special effects in post production, but are more often put to work as 3-D workstations. For recording the animations, Virtual Image uses Panasonic's optical disc recorder as the principal output device, but has an SVHS internal editing suite on site. Other video formats are contracted to a post-production facility.

Using these Amigas, Virtual Image has created models and animations from data describing a wide variety of advanced devices and situations, ranging from commercial airliners for the Federal Aviation Administration to nuclear explosions for the Department of Defense. One project involved visualizations of data returned from sensors on a Los Angeles-class nuclear attack submarine during real sea trials. By viewing this data in animations, clients are able to obtain visual information from situations where a real camera would be impractical or even impossible.



This model of the Navy's Tomahawk cruise missile is based on a physical miniature model and technical information. Virtual Image used this model to produce animations showing the missile in flight.

To create models from databases, a staff programmer wrote a program that builds 3-D models automatically. The data is input from a database of three-dimensional values generated by such sources as medical imaging systems or supercomputer simulations. The program then creates a surface model, which is really only the boundaries of the data. Finally, the geometric information is loaded directly into an Amiga 3-D rendering program.

For Virtual Image Labs, basing the studio on the Amiga was a natural choice. Executive Producer Bartholomew Casiello explains, "All our artists, designers, and animators were Amiga users to start with, it had the best selection of 3-D software tools, and it was the most cost-effective solution for our needs. Those needs are not confined to just graphics, as we use the Amiga in every aspect of the business, all the way from desktop publishing and word processing to slide generation."

—LRW

Just In Time

What time is it when you need to sync your sources? Time for a TBC! And now there is another new internal genlocking TBC for the A2000. *Expert Services*' **In-Sync** automatically senses input references. In-Sync provides one SVHS, one BB, and two composite inputs; on the output side are one composite, one SVHS and one BB. In addition, In-Sync provides an RS-232 port. (RS# 105.)

Spanning the Globe

Aimed at everyone from nine-year-olds to adults, **World Tour** from *Designing Minds* is a series of games to help you learn geography. Currently you can tour Africa, Australia, Canada, Europe, the Middle East, and South America ($39 each), but versions are in the works for the Far East, India, the Pacific, and the United States. In addition to basic geography, you'll learn about each area's capitals, currency, government, languages, religions, flags, and more. Maps provide such details as average rainfall, population, and topography. Challenge a friend or the computer to a game, or print out a word-search puzzle or quiz to test your knowledge. (RS# 110.)

Fonts and Faces

Manufacturers of fonts for titling and desktop publishing have had a busy spring. For use with Imagine, ***CRC Productions*** offers **Image Fonts**, three-disk sets featuring four styles of one all-caps typeface (such as Medium Bold Bank Gothic).

The available styles are plain-edged face, chisel-edged face, bevel-edged face, and emboss-edged face with plain-edged center (a two-piece font). The 3-D letters and digits support phong shading, as well. The sets sell for $29.95. (RS# 112.)

If ANIM fonts are more your style, consider **AnimFonts 4** ($59.95) from ***Kara Computer Graphics***. The two-disk package contains a hi-res, 115-point ColorFont called CHROMEchiselSCRIPT, a shiny gothic script in upper- and lowercase, with alternate characters (r, z, s, l), numerals, and special characters. In addition to the animated version, which first wipes on a static image of a letter, and then wipes on the actual letter with a laser-type burn, a keyboard font is included. As a bonus, you receive a hard-drive installation program, extra palettes, and even some utilities for using ColorFonts.

Kara Computer Graphics also recently converted four of its ToasterFonts into eight-color, high-resolution ColorFonts: **The Headlines 3** package includes CHROMEserif, GOLDextrude, GRANITEchisel, and MARBLEbevel fonts in three sizes (approximately 76, 100, and 124 points) of upper- and lowercase letters, numerals, and special characters. For $79.95, you receive the four fonts, a hard-drive installation program, additional RGB and video palettes, and ColorFont utilities. (RS# 113.)

On the desktop-publishing side, ***Soft-Logik*** has licensed fonts from the Mac developer Image Club to compile the **Soft-Logik Typeface Library**. The 600-font library is composed primarily of PostScript Type 1 fonts and a few PostScript Type 3 fonts that use gradient fills for metallic sheens.

Soft-Logik sells the fonts directly as families, with each weight/style of a family priced at $25. A family of four weight/styles, such as Benguiat, sells for $100. Four font packages are also available from Amiga dealers. The Starter and Newsletter packages (priced at $99.95 each) contain nine and eight styles, respectively, while the Classic and Designer packages ($199.95 each) offer 16. (RS# 114.) ►

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Feel the power at your fingertips. ProWrite 3.2 has all the features you need to speed through your documents in record time. Unique functionality, direct PostScript® capability and a long list of features are the driving forces behind ProWrite's ability to outperform other word processing programs. Features such as jaggie-free printing, improved picture handling, timed saves and automatic backups. Maneuver through documents with multiple columns, snaking and side-by-side text and manual text wraps around graphics. Cruise effortlessly with ProWrite's 100,000-word spell checker that can check as you type, and the reserve power of a 300,000-word thesaurus. ProWrite 3.2 means high performance in printing as well. Options include multiple fonts and sizes in PostScript or high-quality dot-matrix printing and options for 8, 64 or 4096 colors in your graphics.

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World of Amiga, from p. 8.
ahead to the April 15th IRS tax-return deadline by offering version 6.0 of **DataTax** ($75; $29 to upgrade from DataTax or Tax Break). DataTax displays forms in graphics format and creates Lotus-compatible files for import and export to share with your favorite PC tax and business programs. It comes complete with instructions in hypertext format to help you fill out your income-tax statement in a timely fashion.

Datamax also showed its new **Call Predictor** ($149), an example of a new generation of telephone-answering systems. Call Predictor screens incoming calls and reports back to you through your television. It comes in both CDTV and Amiga disk-based format, and works by displaying a graphic of a ringing telephone on screen, accompanied by the name and telephone number of the party calling. If you wish, you can customize Predictor's response so that you can either ignore or answer the calls.

Also on display in Datamax's booth was **DataMail**, which helps make it easy for beginners to send and receive calls via a terminal. It simplifies the file-transfer process by letting you drag icons on screen.

WINTER IN CANADA?

Despite the chilly weather outside, ***Merit Software*** had many show attendees playing volleyball on a sun-drenched beach with **Over the Net** ($39.95). A few well-timed twists of the joystick made lithe characters complete with athletic haircuts gyrate through the air—serving, spiking, and generally acting foolish. The game's five levels of difficulty take you to exotic islands for tournaments on the sand, complete with well-tanned spectators in beach togs. One to four players can play the fast-paced, action-packed game. In championship mode, regulation volleyball rules apply. (RS# 118.)

ProWrite 3.2 proved to be a hit with its dynamic new interface and Compugraphic font support in the ***New Horizons*** booth (RS# 119). Among its many new and improved features, version 3.2 adopts the number of colors that your Workbench uses and offers color-graphics support. Other new and useful features include gray-scale or color PostScript support and a high-quality print mode. It also takes advantage of Workbench 2.0's new fonts.

New Horizons' Central Coast Software division displayed the new version of **Quarterback Tools**, which addresses and eliminates most hard-drive and controller-compatibility problems of earlier versions. (RS# 120.)

In the nearby ***Adspec*** booth, **Draw 4D Pro** developer Greg Gorby had no trouble keeping the attention of both technical- and artistic-minded attendees. His high-speed renderings of DCTV images and various animations made for plenty of excitement. (RS# 121.)

Vortex Computer Systems endured the long flight from Germany to show off its new **ATonce-Plus** PC emulator, a low-power, 16-MHz, CMOS 80286-based CPU board for the A500. ATonce-Plus software allows it to run as a task on the Amiga while giving it a full 640KB of DOS-based memory with 512KB of RAM. ATonce-Plus also makes it possible for your A500 to take advantage of ►

EGA/VGA monochrome graphics and CGA graphics complete with 16 colors. (RS# 123.)

The Big Booth

Among the many companies represented in Commodore's booth, ***Dr. T's Music Software*** demonstrated **Composer Quest** ($99). Resembling a humanities class on CD, Composer Quest is a multimedia game that lets you explore music history from the year 1600. What's more, it gives you a frame of reference through information regarding the visual arts and current events. You can listen to CD-recorded performances of Verdi, Mozart, and Mendelssohn, look at paintings by Rembrandt, Monet, and Turner, and learn what else of interest was happening in the world when these works were in process of creation. (RS# 124.)

Also nestled in the expansive Commodore booth, ***Octree Software*** demonstrated its Caligari line of 3-D modeling products. **Caligari 2** ($399) is the new, low-cost version of the program, and it includes single-point editing, mirror, slice, and sweep functions. You also get an interactive spline-based animation module with a real-time preview feature identical to that in **Caligari Broadcast 2.0**, as well as support for single-frame controllers for recording to videotape. (RS# 125.)

RCS Management showed off the swift performance of its **Fusion Forty 68040** accelerator, which ran under Workbench 1.3 as well as 2.0. (RS# 126.)

Digital Micronics introduced its **DMI Floptical External Disk Drive** ($649), which lets you store 20MB of data on a single disk. The drive comes complete with one floptical disk and all the necessary cables. (RS# 127.)

Parallel Motion Graphics signed off with **SignEngine**, software that is similar to that used by professional sign makers. After creating a sign with a drawing program, you can import it into SignEngine, enhance it with the graphics editor, and then output your work to a vinyl cutter. SignEngine includes drivers for many vinyl-cutting machines. (RS# 128.)

With the show over, our video footage recorded, notes reviewed, and bags packed, we too signed off. It was time to bid a fond adieu to the friendly folk in Toronto and get back to work. ■

—TW and JJ



OVERHEARD

Have you developed educational software—either commercial or public domain—that would be appropriate for students who are learning English as a second language? You can get an audience for your creations at the Vancouver, B.C. TESOL (Teachers of English to Speakers of Other Languages) conference in early March.

Overscan is compiled by Barbara Gefvert, Janine Jackson, and Tim Walsh. Send your news, new products, and network information to Overscan, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458.


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SupraModem 2400 Plus
SupraModem 2400 Plus includes MNP5 & V.42bis error correction & data compression protocols. Allows transmissions up to 9600 bps with V.42bis.
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SupraModem 2400zi Plus Internal half-card modem for the Amiga 2000 & 3000. Installs easily in any Amiga bus slot. Supports multiple modems on one computer. Includes Atalk•III software.
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Turn on your Amiga to its fullest potential — with powerful enhancements from Supra Corporation, a leading supplier of add-ons for Amigas all over the World! In just a few minutes, you can change your machine from its sometimes-painfully-slow performance into a powerhouse maxed out with nine megabytes of memory, high-performance hard drive, and the latest in telecommunications equipment.
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SupraFAXModem™ V.32 9600 bps send/receive fax (Group 3) and data (V.32) with MNP 5 and V.42bis error correction and data compression. Works with any Class 1 or 2 fax software (not included). Available January '92.
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SUPRADRIVE WORDSYNC • SUPRADRIVE FLOPPY • SUPRARAM 500 • SUPRARAM 500RX • SUPRARAM 2000 • SUPRAMODEM 2400ZI PLUS • SUPRAMODEM 2400 PLUS
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SupraRAM™ 2000
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SupraRAM 500
1/2MB memory expansion Includes battery backed-up clock/calendar. Easy to install in expansion slot on bottom of Amiga 500
SupraDrive 500XP
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REVIEWS

DiskMaster II

Progressive Peripherals & Software

Directory Opus

INOVAtronics

Point-'n'-Click Simplicity

By Daryell Sipper

COMMUNICATING WITH computers has never been fun or intuitive for most people. It's no wonder menu and disk-utility programs are so popular. These programs shield the user from memorizing all those ugly commands. Although this is particularly so with MS-DOS machines, even Amiga owners have to wrangle with AmigaDOS and the CLI.

AmigaDOS 2.0 does much to provide a more user-friendly environment. Most disk and file-handling functions are now performed more easily from Workbench. Yet, while novice and infrequent users may find all they need there, power users need more than the basic tools supplied by Workbench.

Two programs that fill that need are **DiskMaster II** ($69.95, ***Progressive Peripherals***), an enhanced version of a highly popular Amiga utility, and **Directory Opus** ($59.95), a relatively new program that hails from Australia and is distributed by ***INOVAtronics***.

These two programs are both configurable and flexible. It's quite amazing to see how far disk and file-handling utilities have grown since the first generation of these programs hit the market several years ago. No longer just tools for copying and deleting files, these workhorses offer so many features you may be intimidated by them at first. Don't be—they are as easy to learn as they are powerful.

Two Peas in a Pod?

Each program comes on one disk. Both are System 2.0-compatible and support ARexx. Both can be started from the CLI or Workbench.

These programs offer many similar operations: You can copy, move, rename, and delete any file or directory. You can use them to invoke almost any AmigaDOS command, and they support many different file types. Disk operations such as formatting and copying are available. You can work with any accessible volume or device.

Don't worry about lots of configuration work. I had both programs installed on my hard drive in only a few minutes. Eventually, however, you will probably want to tailor some functions. Some basic DOS knowledge is required, but it's not hard to reconfigure either of these programs.

There are, of course, some differences between the two. DiskMaster's configuration file is a text file while Opus uses a binary file. Each has its advantages. DiskMaster's config file is more accessible and easier to change with a text editor. A separate program controls the Opus config file, but it is so well structured that all fine-tuning is performed from within it. Each program allows you to save several different configuration files. We will take a closer look at some of the other differences between the two further on in this review.

Both programs use a "source" and "destination" directory format. Working with files and directories is simply a matter of clicking on them and then selecting your desired operation. You can select multiple files and directories and use different file patterns, too. In addition, before deleting a directory, you do not have to delete all the individual files within it; you can remove the entire directory all at once. Both programs display file information in any order you choose. You can also define default display directories.

Some commands aren't used often, so it is easy to forget how to use them. The PROTECT command, for example, changes the protection bits of a file. Using that command with these utilities is a breeze. Simply select your files and choose the protect gadget.

Can't find a file on your disk? Use these utilities to search for you. Do you want to print a text file? Again, just select the file and perform the operation. Printing operations are definable in both programs. You can easily adjust your margins, headers, lines-per-inch settings, and character pitch.

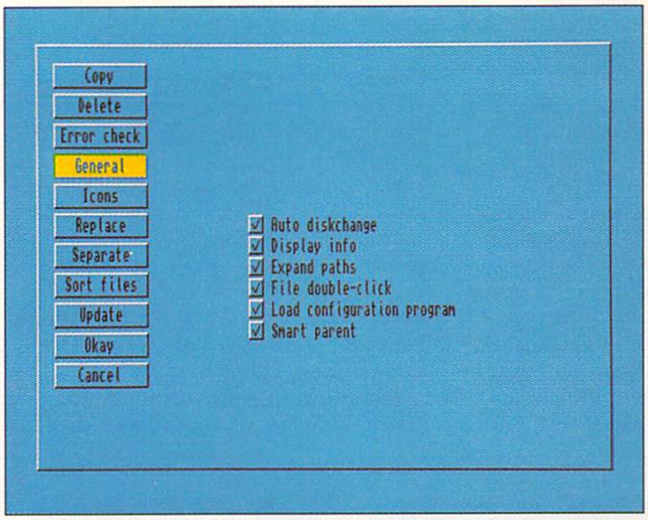
Editing text and script files is just as easy. Just select a file and then your edit command. You are taken instantly to the text editor.

You can format and copy your disks, of course. You can "erase" disks by using the new System 2.0 quick-format option, and you can perform disk operations simultaneously with up to four disk drives. You can also disregard the Trashcan and format without icons. Additionally, you can check remaining disk space to ensure there is enough room to perform your desired operation, such as copying a multitude of files.

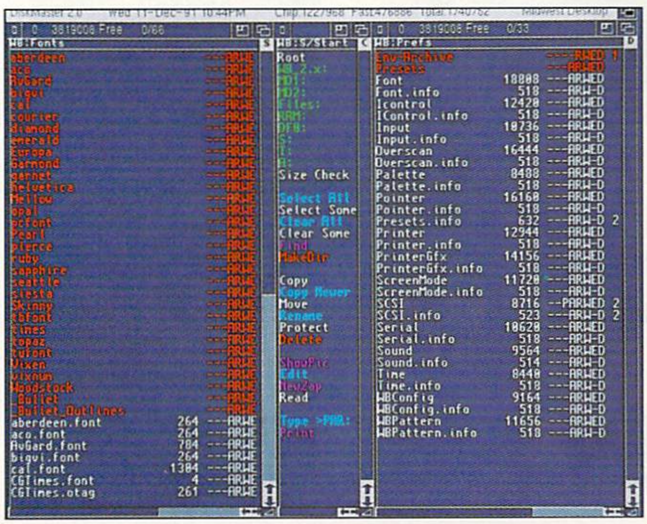
Both programs come with some "intelligence;" that is, you can click on a file and both will attempt to evaluate what type of file it is. Using these features, you can automatically read text and hex files, play 8SVX files, start programs, execute scripts, display graphic and animation files, and compress and decompress archived files. These auto-command features are a pleasure to use.

Three types of archiving are automatically recognized: Lharc, Arc, and Zoo. Neither program provides the archive commands; they must be obtained through your normal public-domain channels. You can use other archiving methods as long as you configure the programs to recognize them.

For information about the vendors of products reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 89.



One of several screens from Directory Opus's menus that help you configure the program.



It's relatively easy to delve deep into directories with DiskMaster.

Both programs display a variety of system information, without cluttering up the screen. At a glance, you know how much chip and fast memory is available, the date and time, and disk information such as the number of files selected, bytes used, and total files.

If you wish, you can customize pull-down menus with either program. Keyboard equivalents are also definable. This allows you to expand your utility's power. You can define custom disk operations or launch specific script or ARexx files to run your most commonly used programs. It's conceivable that some users may want to run all operations from these menus rather than the Workbench.

By Different Methods, Different Men Excel

As you can tell, both programs are very similar and they should be. They are, after all, performing the same basic tasks. Yet, as mentioned earlier, there are differences, as well.

Each program will probably appeal to different markets. If you already use DiskMaster, it will be much easier to learn the new version's features. There are some major changes and improvements, but overall it's the same program that users have become accustomed to. It requires 512K of memory to run and will be a useful utility for those with a minimal system-memory setup or who don't care to learn a new utility.

Opus, on the other hand, requires 1MB of memory. It is also easy to learn, but is much more configurable than DiskMaster. I was amazed at how much can be done with this program. The power user and programmer will probably be attracted to Opus.

Opus offers quite a few extra features to compensate for its huge memory overhead. You can iconify it, and it is also one of the few programs that uses the Help key and on-line help. In addition, it explains AmigaDOS error messages, and it can display icons and fonts. It has a slick "fade" feature when displaying graphics and can launch CanDo decks. What's more, you can define almost every feature of Opus with a keyboard equivalent.

You can change the name of a file or directory, and Opus will (if it is configured to do so) automatically rename the file's icon. While many Amiga developers seem blind to the fact that disk-caching systems are a hot-selling item on other platforms, Opus fortunately uses a built-in caching system, which saves considerable time in displaying directories.

Both programs allow you to customize your screen colors, but DiskMaster wins the prize for customizing your screen display. It allows you to display and resize your directory and command windows in almost any place you desire, and it allows multiple directory and command windows on the screen. The command gadgets and display windows in Opus are fixed. I would like to rearrange them on my screen to the locations where I find them most pleasing and accessible. I also like DiskMaster's "parent directory" button on top of the slider gadgets, although Opus has a similar feature using the window borders, which I have come to like.

Both programs require the use of a fixed-width font, which makes sense, as it enhances the directory display. DiskMaster allows the use of different sizes, while Opus offers point sizes up to 64.

In terms of documentation, the Opus manual is full of information, but is disorganized and lacks configuration examples. DiskMaster's manual is more organized and provides some configuration examples, though not enough. Luckily, these programs are intuitive and are best learned by experimenting rather than reading the manuals.

Nothing's Perfect

Weaknesses? Sure. Both programs suffer from the same font problem that I've found in almost all "2.0-compatible" programs. Simply change your system-font Preferences to anything other than topaz/8 and watch how the title bars and menus become distorted. ►

Opus is somewhat excused from this problem, as its manual states that only 8-point fonts can be used. Still, this appears to be a common programming oversight; developers need to pay closer attention to this type of detail.

DiskMaster comes with several configuration files, but they are disappointments. Each is simply a variation of color or screen display. There are few menu and configuration examples. Opus supplies no configuration examples at all, and, as stated, the manual does not offer much help.

DiskMaster could be friendlier during disk operations. It appeared to have crashed while performing a disk copy, but it was really waiting for a disk. A message was up in the title bar, but no standard requester appeared asking me for a disk. I then had to insert a disk and complete the entire operation, as there is no way to cancel once it has started. With Opus, I simply pressed both mouse buttons to cancel an operation at any time.

Sampling an entire directory of sound samples is fun. I noticed that Opus uses only one channel, however, while DiskMaster plays in stereo.

Opus provides a few examples of how to use the ARexx port, but DiskMaster does not. ARexx is a wonderful tool, but most people (including me) don't care to program. For those who do, all programs should at least come with some useful ARexx examples.

A Win-Win Situation

These few complaints, however, do not lessen either program's usefulness and power. I simply can't imagine many people using their Amigas without either of these programs. Both are stable, powerful, and productive. Both handle most chores in a pleasing manner. Both allow you to do more than just the basics. Programmers, power users, and Amiga veterans with extra system memory may be drawn to Directory Opus. Novices, those who are comfortable with past versions of DiskMaster, and users with limited system memory might lean towards DiskMaster II. Either way, you win. You won't regret buying either (or both) of these programs. *(Editor's note: INOVAtronics has released several versions of Directory Opus since the initial version was tested. Upgrades are available for $7.50, plus $2 for shipping and handling.)*

Kitchen Sync

Digital Creations

Switchin' in the kitchen.

By Joel Tessler

IF YOU GET a sinking feeling from looking at the price and quality of the dual-channel, full-frame TBCs currently available, then ***Digital Creations*' Kitchen Sync** could be your ticket to video synchronicity and SVHS compatibility.

The Kitchen Sync is not just another Amiga appliance. Rather, it is a miniaturized, high-quality, dual-channel TBC that fits into one of the Amiga's IBM slots and uses a total of a mere 7.5 watts. Priced at $1895, it offers features and quality up until now out of the financial reach of most of us. In fact, this product's convenience and ease of use has never been available in any TBC at any price until now. Clearly, this unit is aimed squarely at users of NewTek's Video Toaster.

What's Cooking?

This package's board set consists of the main TBC board, the remote-control

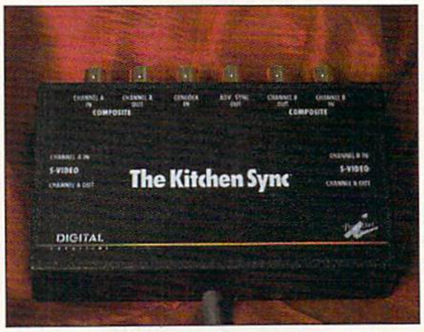
unit, and the video-connector box. To install it, insert the main board into an IBM slot, plug the cabled video-connector box into the DB-15 port at the rear of the Kitchen Sync, and hook the remote-control unit's cable up to the HD-15 port. I had no problems with this simple procedure.

The Kitchen Sync's connectors include two four-pin Y/C inputs, two four-pin Y/C outputs (not implemented in this version), two BNC (twist-lock) composite video inputs, two BNC composite video outputs, one BNC advanced sync output, and one BNC genlock in (also not implemented in this version). The video-connector box has quite an array of connectors for use with a variety of hookups. For the most part, however, the most popular configuration is likely to be two VCRs hooked to either the composite or SVHS inputs. These are then connected directly to the Video Toaster's composite-in from the Kitchen Sync's composite-outs. This does give you the extra SVHS bandwidth when using SVHS inputs.

I found the software puzzling upon first glance. I kept rummaging through the box looking for a disk. When I booted the system, however, it finally dawned on me that the "software" was "firmware" burned into the main Kitchen Sync daughterboard. The green glow from the remote-control unit's info window (see photo) displayed the message "Please Wait Calibrating." A closer look at the remote-control unit revealed its five buttons and two-line, 20-character LCD display. You use button A to decrement settings, B for "Shift," C to increase settings, D for "Next," and E for "Enter."



The Kitchen Sync's remote-control unit.



The video-connector box.

DEEP SYNC

If you click on the Next button, you find several menus. The Freeze menu allows for either full-frame, field-1, or field-2 freezes. The field-1 and field-2 options are very effective when working with fast-moving video such as sports footage. No matter which type of freeze you choose, all three are always available and in interlaced mode. Freezing images on the fly with the Kitchen Sync is a breeze, because one of the three types of freezes usually gets the job done without using the Video Toaster's motion-removal option. The ability to capture imagery on the fly makes this a truly dynamic process.

The Proc Amp menu allows control over hue, saturation, gain, setup, luma peaking, chroma horizontal, chroma delay early and late, and chroma advance. You can select all of these options for use on the A or B channel. These features alone can solve most of the problems encountered in the world of video, but the Kitchen Sync does not stop here.

The Special Functions1 menu lets you select horizontal positioning (left and right); PAL or NTSC; Y/C SVHS or composite; auto switch; V-lock mode: auto count, force 625, or injection; AFC gain: high, VCR, or low; and set base, an option that allows for using multiple Kitchen Syncs in one Amiga.

Program Store allows you to save out and load back two custom setups for your particular studio needs. In addition, you can always reload the original factory default settings if you find you need them.

Most of you probably will not use the features available in the Deep Sync menu, but they are available for advanced users. Special Functions2 allows for adjustments ordinarily found deep under the hood of old-style TBCs. Deep Sync also offers luma delay with a range of 594 to 882 ns (nanoseconds). Blanking Lines can be adjusted between 11 and 22 lines. There are also a horizontal-calibration-loop enable or disable, a horizontal filter that you can toggle open and closed, and a horizontal-drive delay with a range of 0 to 5ms. Next in this menu is the vertical time

Continued on p. 78.

TOUCH... and GO!

If you want to create interactive multimedia presentations, this guide to nine of the best Amiga authoring systems will put you "in touch" with the tools you need.

By Geoffrey Williams

So you want to put on a multimedia show. Not just any show, mind you, but one that the user can interact with and control. Well, there's a battery of Amiga multimedia software for doing just that. Each one allows you to create on-screen buttons and objects you can click on to control your presentation.

There are two types of interactive multimedia programs (more commonly known as authoring software). Script-based programs are considered the most powerful and flexible, but they are also more difficult to use because you must learn a scripting language in order to employ them effectively. On the other hand, object-oriented programming software (OOPS) allows you to construct programs by manipulating icons, or objects. Instead of a text-based script, object-oriented programs produce an iconic flowchart of your presentation.

(To locate the vendors of products mentioned in this article, see the "Manufacturers'/Distributors' Addresses" list on p. 89.)

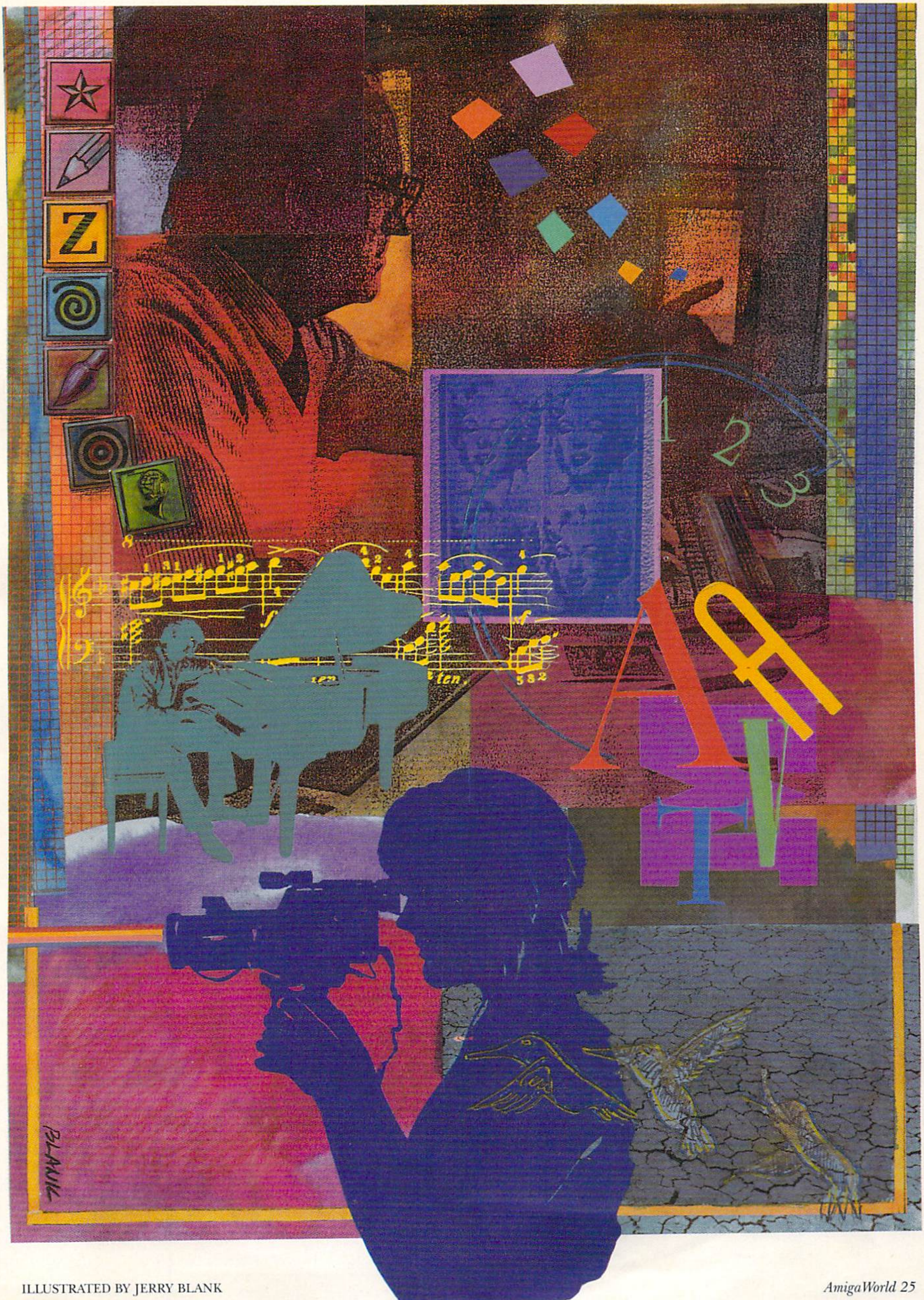
Object-Oriented Programming Software

I WILL FIRST take a look at OOPS, because, while generally less powerful, they are much easier to use, and the presentations you create with them are easier to debug. Then, in the second part of this article, I will examine some script-based programs such as The Director, Version 2 (see "Directing a New Script," p. 37, for more on that program).

AmigaVision

AmigaVision ($149.95, *Commodore*) is at the top of the OOPS list. It comes free with the purchase of an A2000 or A3000, which means not only that it is in the hands of most Amiga owners, but also that there are a lot of AmigaVision presentations available that you can study and learn from.

Having employed AmigaVision on numerous projects—many with tight deadlines—I find it to be the fastest multimedia development product, and the easiest to use. Its interface is friendly, and the flowchart clearly lets you follow what is going on. I particularly like Amiga- ►



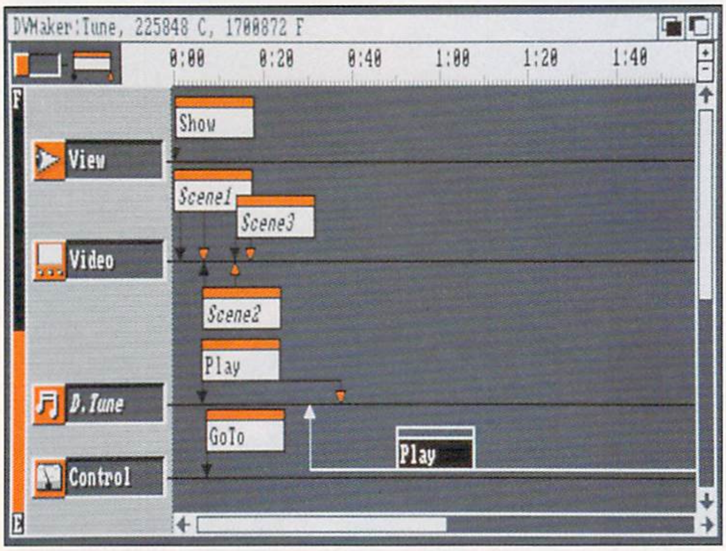
ILLUSTRATED BY JERRY BLANK

Vision's ability to telescope sections into a single icon: This feature enables you to put routines into separate icons, each of which you can drag to a different window and test by itself, and then save and load into other presentations.

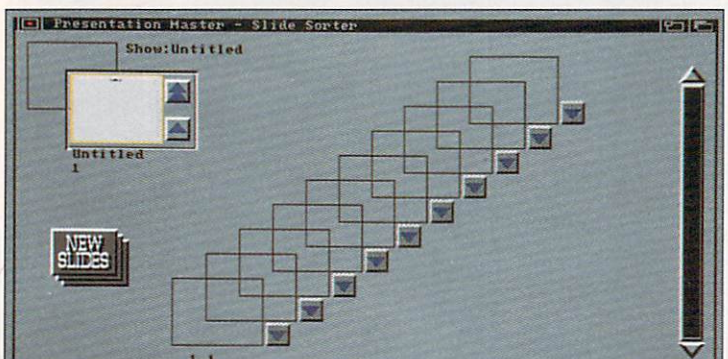
AmigaVision also makes it possible—without touching the keyboard—to create scripts by double-clicking on an icon and using the gadgets in its corresponding requester to set the icon's parameters. With ARexx and full laser-disc support, AmigaVision has all of the basics you need to create powerful presentations. In short, if you are working with interactive multimedia, this program is a must.

DeluxeVideo III

While the interface of **DeluxeVideo III** ($99.95, ***Electronic Arts***) is icon-based and similar to that of AmigaVision, the major difference between the two programs is that DeluxeVideo's presentations are time-driven rather than event-driven. This means that while DeluxeVideo can pause to wait for an event, such as a click on a screen button, and then branch to a different part of the script, its icons are laid out along a time line instead of as a series of events.



With Deluxe Video III, time is on your side.



Presentation Master's Slide Sorter interface.

Only the script-based program The Director, Version 2 comes close to DeluxeVideo in the number of screen transitions, wipes, and effects available, and in the ability to scroll SuperBitMaps and overlay various graphic elements to create complex animations in real time from various still elements and animbrushes. This is an extremely memory-efficient way to work with animation, because you can create long sequences and reuse the various elements in memory to develop different effects.

With DeluxeVideo, you can make interactive buttons from regular brushes, animbrushes, or lines of text. In addition, the program has an ARexx send-only port. While it lacks such features as laser-disc control, database functions, and the use of logical operators like If/Then in script branching (because it is primarily designed for linear time-based presentations), DeluxeVideo III is a very strong graphics and animation presentation product with simple button and function-key branching.

Presentation Master

Presentation Master ($399.95, ***Oxxi***) is more reminiscent of the powerful slide-presentation programs available for the PC or Mac than of traditional multimedia programs for the Amiga. While the program's button-making is limited to visible and invisible rectangles, and there is no ARexx or laser-disc support, Presentation Master is still an absolutely critical tool for performing serious multimedia work.

With Presentation Master, you can create Amiga-type presentations that incorporate sound with animations and still images, with plenty of available transitions. In addition to these standard multimedia features, Presentation Master has the ability to let you design slides that are of desktop-publishing quality.

These slides can be shown as an Amiga-based presentation (using dithering to give more apparent colors), rendered to a PostScript printer, or sent to a PostScript slide service so that you can display them at full resolution and in full color (which you can specify using Pantone or DIC colors). You can save images in the major printer file formats for slide-service bureaus, create outlines and storyboards in a variety of formats, and even print miniature images with speaker notes.

The program allows you to create images in an object-oriented paint module, or to import Adobe Illustrator EPS files and render them to the screen. In addition, you can use Amiga bitmap fonts, scalable fonts, and Polyfonts (the Oxxi format), and you can import text into templates and have it automatically formatted with bullets. A spreadsheet that lets you turn numbers (whether from input or import) into a variety of charts—from the traditional bar and exploded pie to Gannt—is also part of Presentation Master.

Included with this product are well over eight megabytes of EPS clipart, bitmap clipart, Amiga fonts, scalable fonts, and templates. Suffice it to say, Presentation

Master is a program that all serious multimedia producers need to have.

Script-Based Programs

ALTHOUGH NOT AS intuitive as their icon-based cousins, script-based multimedia programs offer plenty of power.

Interactor

I classify **Interactor** ($79, ***Very Vivid***) as script-based because it uses words rather than symbols. It has an odd, folder-based interface that takes some getting used to, but which is fairly easy to employ once you get the idea, The interface displays only the current operation, so you cannot get lost in a large script, and you can add new options by pointing and clicking with little typing.

Interactor is far from being a full-featured authoring tool, as it has limited sound capability, no ANIM support (it uses its own format from individual frames), and no transitions except for fade. It does have some important and unique features, however. The most significant of these is the flexibility it offers in creating interactive buttons. These can be animated to move across the screen, can move independently with their own velocities, can be affected by gravity, and can be activated by colliding with other objects on the screen.

Interactor seems ideal for creating interactive animation and some rather sophisticated presentations (via its laser-disc support); it can even be used to create arcade-type games.

Mandala

Mandala ($495)—also from ***Very Vivid,*** and with the same interface as Interactor—is an update of the virtual-reality software that the company originally sold years ago. Mandala's reincarnation has strong MIDI capabilities as well as laser-disc support. It also includes an ARexx port and the ability to send commands through the serial port to another device or to another copy of Mandala running on a different Amiga.

The program requires A-Squared's Live Digitizer, which digitizes a video camera's live shot of a person and adds a single color image of the person to an interactive environment. When the boundary of the person's image crosses the boundary of an object on the screen, it triggers an event. You can use a genlock—with or without a chromakey device—if you want to see a live video image of the person on screen.

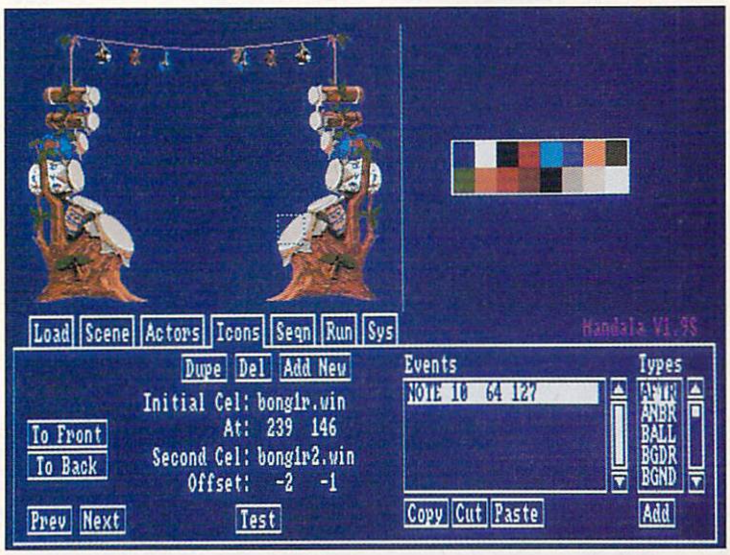
Mandala's power stems from the unique ways it lets you interact with on-screen objects. You can make bells ring, play musical instruments, and even grab objects that stick to your hand. With Mandala, any object can become animated when touched. Moreover, objects do not have to be stationary: As with Interactor, objects can move along random paths, interact with one another, and be affected by such forces as gravity and velocity.

As a virtual-reality product, Mandala is great fun to play with—I feel as if I can step into a cartoon world and interact with it. It is difficult to get away from the cartoon look, however, for the program supports only lo-res graphics. (The company is currently looking into developing a version for NewTek's Video Toaster; that combination would have the potential to offer significantly enhanced features.)

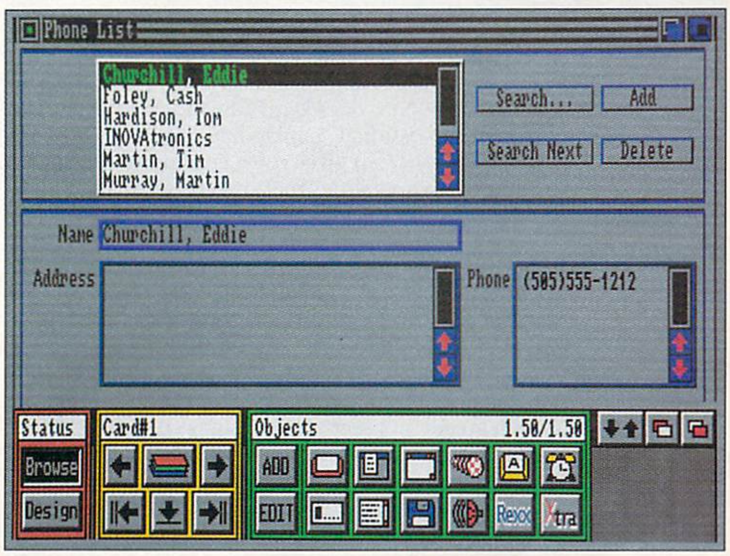
Yet, as it seems to be with all great things, there is a downside. Both Mandala and Interactor sport one of the most insidious and impractical copy-protection schemes I know: the dreaded dongle. If you lose the dongle, which plugs into the joystick port, the product will not run, so you might just as well throw away the software, as a dongle cannot be replaced. This is a frightening prospect.

CanDo

CanDo ($149.95, ***INOVAtronics***) requires that you do some script writing, although you can accomplish the basics for multimedia presentations by simply pointing and clicking on the different options. Most of the actual typing is likely to occur when you employ CanDo's advanced features to create fully functional programs—anything from a calculator to a front-end control panel for ARexx-compatible multimedia programs. ►



Mandala lets users interact in unique ways.

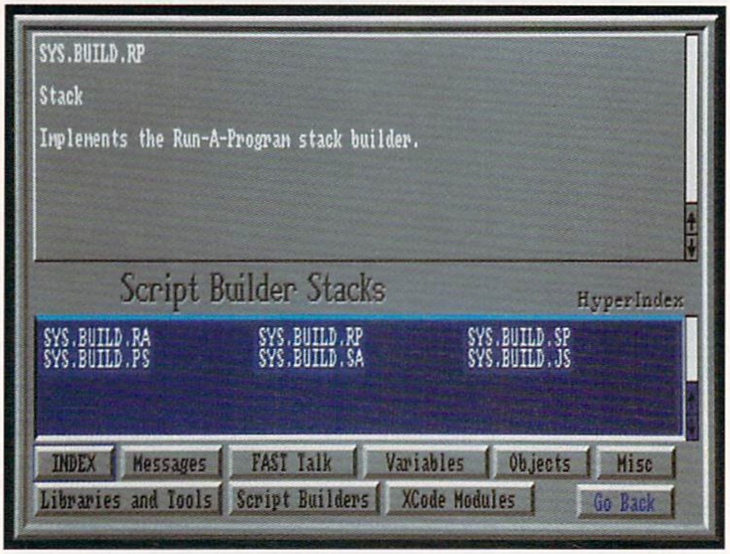


Interactive multimedia? CanDo!

It is not specifically a multimedia program, as it lacks laser-disc control, built-in transitions for pictures, and music capabilities (except for digitized samples). It can handle the basics of playing animation, sounds, and pictures, and it also has a number of advanced features, such as the ability to grab a section of a picture, display it as a brush, and draw with it.

It also has a complete paint program that can record and play back every stroke in a presentation, and you can draw paths that can be edited for animbrushes. Of all the programs available, CanDo has the most options for interactive buttons, with different events activated by a click, double-click, click-drag, or click-release. In addition, you can make anything into a button, or generate a wide variety of buttons from within the program.

CanDo's real strength is that it lets you create programs that fully support the Workbench environment, with pull-down menus, file requesters, Workbench 2.0 border styles, radio knobs, rollo gadgets and APPEvents, plus multiple windows with scroll, size, close, drag, and depth gadgets. I particularly like CanDo for adding interfaces to CLI-only programs and for creating customized interfaces for programs such as NewTek's DigiPaint and ASDG's Art Department Professional. CanDo handles the basics with a few limitations, but gives you a considerable number of additional capabilities that can create very sophisticated interactive environments.



You can build on the power of Foundation.

Foundation

Impulse, the creator of **Foundation**, has a reputation for excellent products and exceptionally poor manuals. Foundation ($250) follows in that tradition. My first glance through the manual left me with a very negative impression, but once I began to play with the program, I gained a much greater appreciation of its power and flexibility.

Foundation's authoring language, Fast Talk, has several hundred commands, but the manual makes it a real chore to reference them. Thankfully, the program offers a nice on-line help feature that lets you avoid agonizing over the documentation. The Help notes for each command include examples you can automatically paste into your script and edit.

Script writing is made easier with Foundation's ability to load in all the commands from a file requester and then fill in the options. It offers a full script editor, and, as in CanDo, the scripts are attached to interactive objects such as buttons and pull-down menus. Another option Foundation includes is Hypertext, which makes words and phrases in a text file become interactive objects.

This product also has a full range of commands for CDTV, making it a strong CDTV development environment. Foundation appears to have all the necessary ingredients for an authoring program, and while I have not explored it fully, it looks very promising.

The Director, Version 2

Considered by many to be the most powerful multimedia product on the market, **The Director, Version 2** ($129.95, ***The Right Answers Group***) also has the steepest learning curve and requires the most typing. To make text entry easier, however, the program provides a text editor that can run your script and show you where errors occur. To help reduce some of the typing, The Director provides several interactive utilities that can be called up from its text editor: The Button utility helps you create interactive rectangular and free-form buttons; the Blit utility lets you cut out areas of an image in memory for later manipulation; and the Polygon utility allows you to create and edit polygons that can be morphed from one into another.

The Director's power comes from the way it manipulates graphics, as it can hold images in memory and grab pieces of them to display in various ways. You can even perform partial page-flipping by using the images from a single screen.

If you need a powerful authoring language that lets you do almost anything with sound, music, graphics, and animation—all in memory-efficient ways—then The Director is for you. If you need advanced and sophisticated interactivity, The Director is again well up to the task. It will take a considerable investment of time on your part to learn this program, but many of the best multimedia developers I know use it exclusively because of its power and execution speed.

Aegis Visionary

While not intended to be an interactive multimedia product, **Aegis Visionary** ($99.95, ***Oxxi***) does have some unique features. Designed to allow you to create graphics and text-based adventure games, Visionary supports multimedia capabilities such as scrolling SuperBitMaps, animation, sound, speech, and MIDI. And to branch to different areas of the program, you can click on objects on the screen.

Allowing typed responses and then parsing them (reducing them to basic components and interpreting them) is something unique to Visionary. With a little imagination, you can use that feature to create very different types of interactive presentations.

While Visionary is a true authoring language, it does not offer any hand-holding: You use any word processor to write your script, and then you compile it into a working program. ■

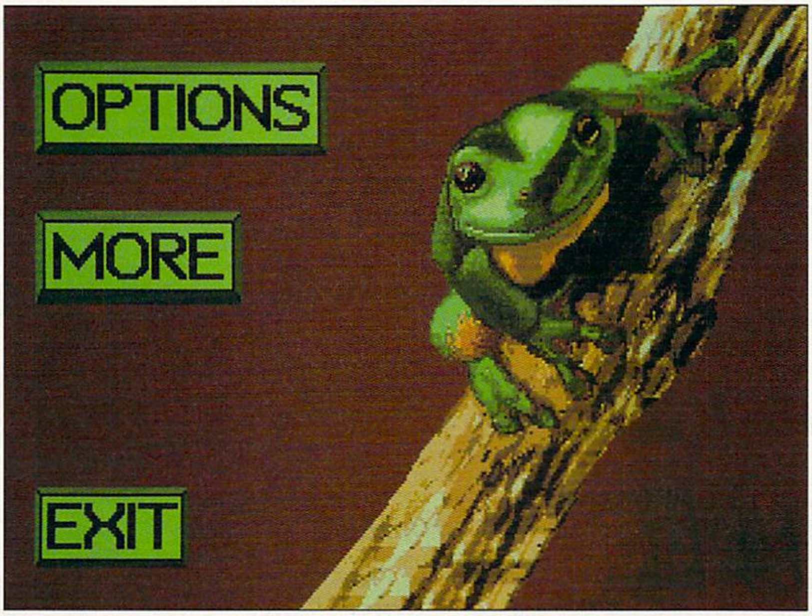
Geoffrey Williams is Executive Producer for Creative Business Communications and head of the Amiga Video-Graphics Guild. Contact him c/o AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458.*

INTERACTIVE MULTIMEDIA PRESENTATIONS

The PRODUCTION LINE

The shortest route between conception and delivery of a multimedia presentation depends upon several things. Here is a guide to planning and carrying out your production—whether you are doing it for a client or yourself.

By Robert Edgar



Start at the beginning, go until the end, and then stop. Sounds easy enough. When you are starting out on a new multimedia project, however, it is sometimes hard to know where the beginning and end are, never mind the steps in between. Let's map out the territory of interactive presentation development, taking a look at all the points along the production line.

Because knowing where you are going becomes all the more important when working for a client, I will present the information in those terms, showing what it takes to produce an interactive presentation for a client, and what is involved in such a contract. Keep in mind, however, that when you are producing a project for yourself, you are the client. Thus, it is important to go through the same basic process—asking many of the same questions and considering the same issues—when working for yourself. ►

Here, then, is a seven-part structure that you might use as a starting place for winning and planning a project. *(To locate vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 89.)*

1 Determine the goals of the project.

Before you get a job, you may need to bid on it. Before you bid on it, you need to know what the task involves. When you meet with your prospect, don't get so lost in your sales pitch that you forget to listen and ask questions. What quality and technology is he or she expecting? How much does the client expect to pay? How near is the client to beginning the project, and how soon must it be completed? The sooner you know the answers to these questions, the better.

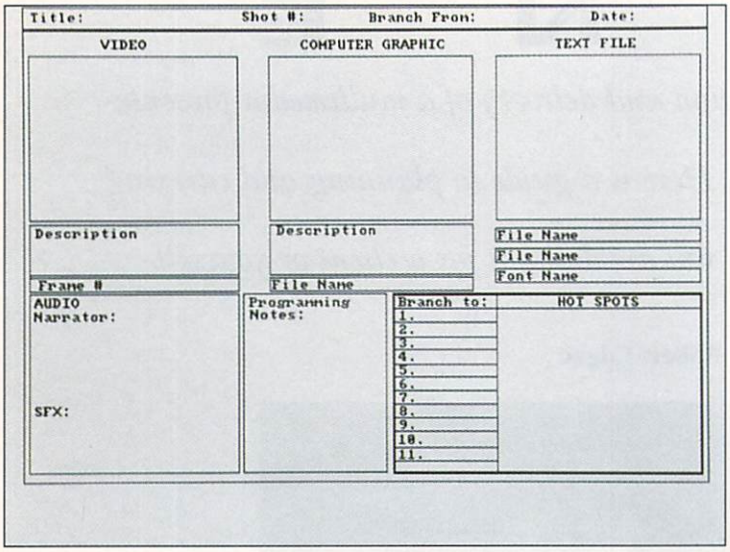


Figure 1. A sample storyboard template, to be used in conjunction with a written script and flowchart. Across the top are three frames for drawing the video, computer graphic, and text elements of a frame (this is assuming genlock-overlay capability). "Video frame #" shows the video-disc start and stop frames for the shot. The effect of a click on each hot spot is indicated in the "Branch to" section.

To begin the dialog on product cost and quality, I suggest you create a demo reel that displays a graduated range of production values, from the least expensive you would deliver to the most expensive. Prepare to discuss how long each image took to create, what sources you used for imagery, and so on. For each example, have costs ready in terms of video per minute, graphics, animations, coding complexity, and the like. This is not your bid, but a quick lesson for your client on interactive production. The client will want to purchase your best work, of course, but should know up front what it costs, as well as the quality he or she can afford.

What *you* should know up front is how much of the project the client wants you to do. Will you be responsible for overall design? Research? Scripting? Storyboarding? Graphic and video production? Editing? Programming? Maintenance? Hardware purchasing and/or integration? Now's the time to define the scope of the job. (For some specific design concerns affecting your choice of equipment for the bid, see the sidebar "System Integration.")

In many cases, the initial meeting is a time when you must balance the nurturing of the client relationship with giving some free education on the intricacies of interactive video production. You must judge how much time you are willing to spend on the possibility of getting a contract.

This stage is always longer than it seems it should be, and the more expensive the project, the longer it will probably take to close the deal. Six months from your first meeting is likely for interactive video contracts. My experiences show that this time is both well spent and appreciated, and that very few prospects will take extended advantage of your time without giving you the contract. But if the talks stop moving forward, or if the prospect keeps changing his or her mind about basic elements, you may be better off investing your time elsewhere.

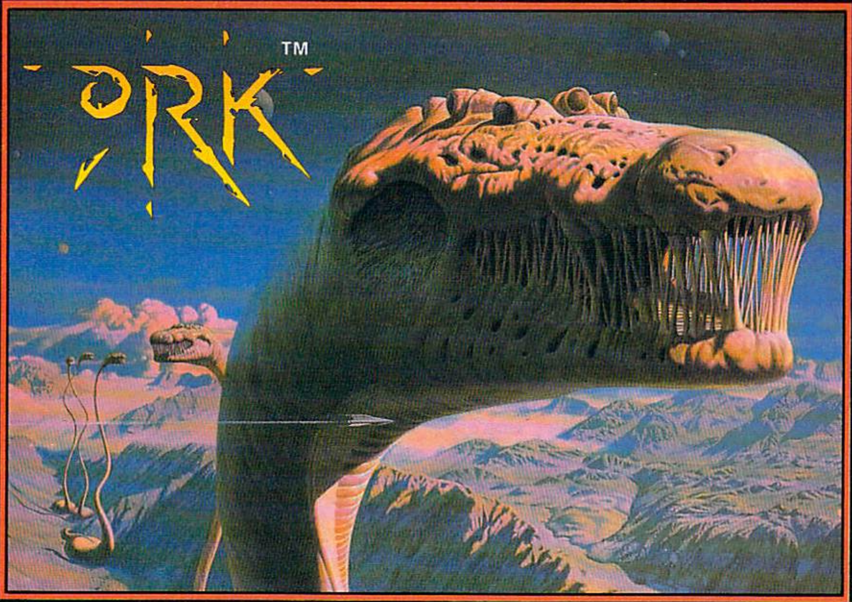
2 Put together the project bid.

In bidding a project, make sure you consider every deliverable item for each party throughout the scope of the contract. Specify in writing where and when you will receive content information, who decides on music, where source images will come from, and in what medium and in what size they will be. Also designate responsibility for obtaining written releases for images and music. Specify the dates when you will review the project and what will be covered at each review point; if everything is fair game to be changed at every step, you are in trouble before you begin.

The difficulty of delivering a bid up front is that no one may know enough at that point to make an accurate estimate of the work to be done: not the client, and not you. One approach is to define what you know of the project, and insert a "not to exceed" clause. This means that you will design and produce to a ceiling amount (and it is up to you to protect your profit while keeping the client happy). This has the strong benefit of locking you into the entire project from the beginning, and is probably the route to take with all but the most confused of clients.

A second approach is to bid for a design document that describes the project in detail and contains a bid for the production. The danger here is that the client can go elsewhere for production once he or she has the design document. Try to include an agreement that you will do the production. Use this approach if you feel that the client doesn't know his or her expectations clearly enough to give you a basis for estimating the cost. You might also use this if a client has not decided whether or not to include interactivity and needs to see more of what it would entail.

Try not to underestimate how much time it will take you to produce each stage. After all, it may rain during one of your outside shoots. You may have trouble debugging the program or handling some problem between image palettes. Assume that your most optimistic schedule will not happen. It is better to do so up front than to have to back-pedal near the expected delivery ►



ORK

Beamed down to the planet Ixion from the Legion Ship, Cisskei, aspiring Captain Ku-Kabul has to face the dangers and tests specifically placed on this planet in order to prove himself worthy of Leadership. Failing any of the tests will end his career as a Legion-Command Officer . . . permanently!

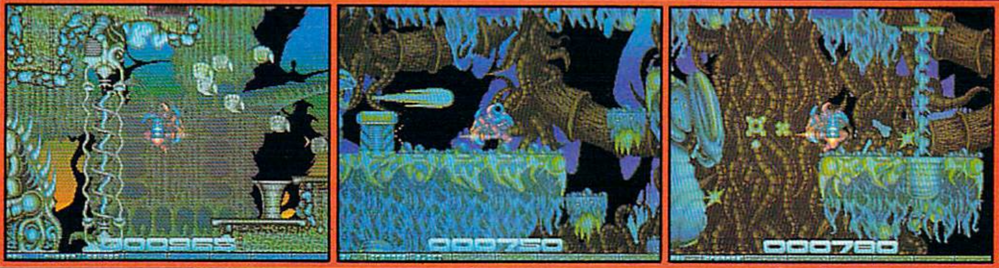
To give him a fighting chance, Ku-Kabul is fitted with twin laser cannons and refuelable jet boosters.

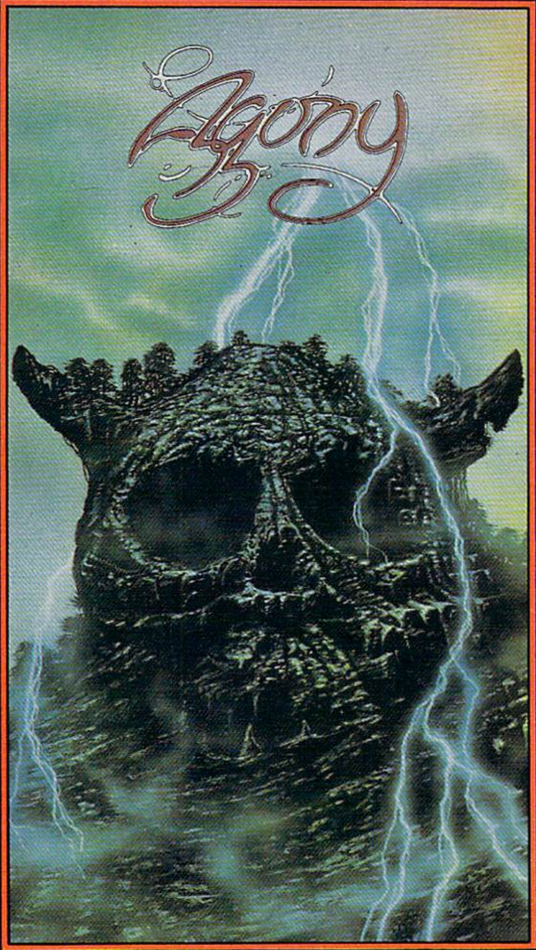
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Are you Ork enough?

Screen Shots from the Amiga version.





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Pick up potions and spells to help your valiant struggle to find the secret of Cosmic Strength.

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Experience Agony with no pain!

Screen Shots from the Amiga version.





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date, which puts your client in trouble with his or her own deadlines and managers.

3 Write a content outline.

I suggest that before you create a storyboard and flowchart in detail, you outline the content of your presentation according to what the client provides. This gives the client a chance to make adjustments before you are so far into production that it becomes costly.

In your bid, you might want to freeze the content upon acceptance of this document. This would mean that if the client wants to change the content after approving it, he or she knows that it will mean additional time and cost. Changes to content once you are in production can kill you if you have not raised the issue previously. On the other hand, if you get this freeze in, you do not need to charge the client unless such changes actually do cost you money. Helping a client out can earn good will that might help you win the next job.

4 Create the design document.

The design document is generally the next level after the bid, and the first one to be informed by the actual content you have received. It should reflect your design decisions and bring them to your client's attention so that he or she can approve them before you begin production.

The design document should show the concept of the presentation and your ideas for the way it should be realized. Will you have voice-overs? Is a narrator seen, or always off camera? Where will you use animations and computer graphics? Where will you use video? What kinds of actors will you use, and how should they be dressed? Where will you use humor? Do you have a music library picked out? Where will music be used?

At this early stage, you face a danger in trying to communicate heavily visual concepts without the help of the actual results. Beware of clever and original ideas that may get tossed if you cannot describe them well. Ride the pulse of this communication carefully; it will make the difference between a genuinely inventive production and a cliché-filled work that does not catch the intended audience's attention.

5 Detail with flowcharts and storyboards.

The flowchart and storyboards, based on the design document, must supply enough detail to allow someone else to produce from them. Storyboards for interactive projects can be quite detailed (see Figure 1). You must not only show what will be on the screen, but also differentiate among various sources. What part of the screen image is coming from a video disc, and what part from the computer? What text is spoken by a narrator, and what is generated as characters on the screen? What areas of the screen are hot spots, and to what point does each hot spot branch?

If you are doing the programming, you may want to use a flowchart in addition to storyboards. There are several flowchart types, as well as tools for designing them.

When I'm ready to consider the flow, I get a pile of 3×5 index cards and write the name of one piece of content on each. Just brainstorm, mix categories unabashedly, and throw them all into the center of the floor. When you have exhausted everything you can think of, find a big table, or just use the floor, and arrange the cards in a hierarchical tree structure representing the flow of the piece. The beauty of the cards is that you can quickly and easily sort out the categories, fill holes and try new structures.

Once you have completed the flowchart, sketch it and begin your programming. This is a great way to proceed from no structure to one that's ready to be realized in an AmigaVision flow—that hidden step not mentioned in any documentation.

Some database structures and hypertextual links ►

(Text continued on p. 36.)

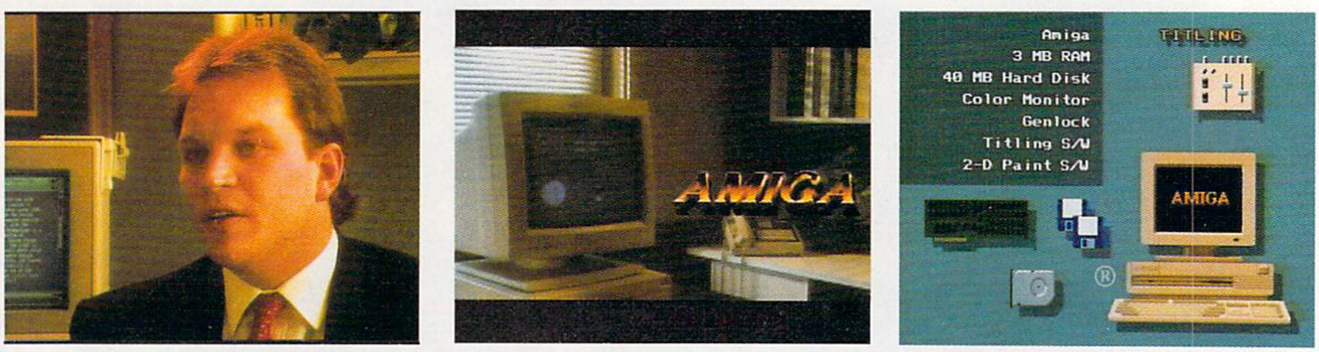
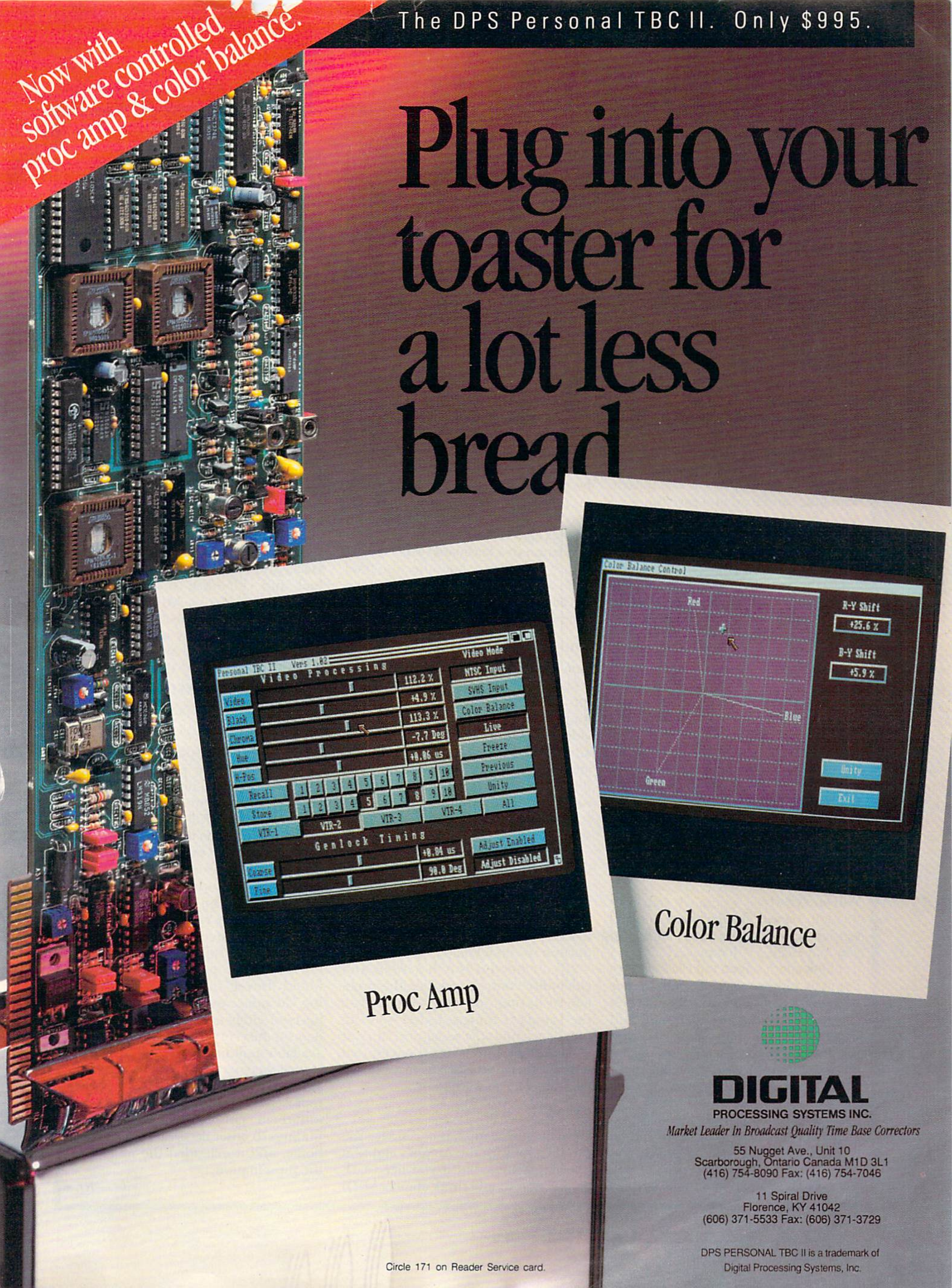


Figure 2. In a point-of-sale system for Commodore, three short video segments introduced each Amiga application area. The first was a testimonial by a professional using the Amiga for that application (left). Then we presented examples of the output for that application, along with features and benefits (center). Finally, we ran an animation that suggested a configuration the customer could immediately purchase to accomplish what he or she had just seen (right). A separate hands-on introduction to multimedia provided a fun way to get acquainted with the system. We provided retailers with access to the code so that they could customize the presentation to meet changing product lines and specific market needs—and many did so.


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System Integration

WHAT ARE THE platform characteristics the job requires? The components you choose for delivery of your system will depend, among other things, on your budget, speed requirements, and the scope and setting of the presentation. Here are some of the things you should consider:

Speed of Response

The faster the required response time, the more expensive the platform. You can purchase speed through:
1) Memory. With enough RAM, you can load both current and next-in-queue files. This requires tricks for interactive sequences.
2) Accelerators. Faster processors can speed animation playback, database searching, and load and save times.

Storage Devices

Don't even consider using floppy disks. Access time is too slow.

CDTV is inexpensive, but loading files from any CD can be time-consuming and difficult to cover up. On the other hand, delivery of CDTV XL digital video files is a great way to deliver sync motion and audio on an inexpensive delivery platform.

Searches on laser disc can range from shorter than vertical interval (the time between video fields) to over a second, and a major factor can be the speed of the player. In general, you pay for the speed: faster players cost more than slower players. A second approach is to use two video-disc players, having your software continually cue one up while the other is playing.

Viewing Distance

Will one viewer at a time see your production, or will groups watch concurrently? If you have a large audience, you may need a video projector.

Think about screen interlacing in relation to audience size. A single viewer may be very close to the screen, necessitating a noninterlaced image and noninterlaced monitor. With distance, the jittering effect of screen interlacing tends to diminish, although large monitors can extend the problem for some distance.

Providing a noninterlaced signal while using video for an input can be a problem. Some genlocks that can provide a noninterlaced output will not do so if receiving an interlaced input. One that will is GVP's Impact Vision 24—with the optional RGB decoder—but this is not a low-end genlock, and it may not be applicable for low-budget jobs.

If you need a noninterlaced display but cannot budget an answer, be sure that all horizontal lines are at least two scanlines thick, and that you test all graphics on an interlaced monitor during development.

Input Devices

The simplest interface for the passerby is a touch screen, but you should add about $600 to your cost per delivery station if you use one. A trackball is less expensive, but can be offputting for people frightened by technology.

Stay away from a keyboard unless you need the viewer to enter text. Some situations lend themselves to touch-screen emulation of a keyboard (which can be clumsy for a typist, but otherwise fine).

If you have multiple groups watching, will anyone be able to provide input? Do you need multiple input devices?

Video

Don't consider video for a production budget of less than $2000 per finished minute unless the video is already done, you need less than a minute of video, you own your own production and post-production equipment (and are sure the quality it provides can meet the task), or you are a guerrilla videographer and know from experience that you can produce satisfactory video for such a budget.

If you are going to put the video on disc, you will need a Beta-SP, C, or D2 master tape to send to the disc production house. This does not mean you must shoot in one of these formats, but it does mean a trip to another post-production studio if you don't.

If you need a touch screen and video-disc control, you face the problem of having only one serial port in the standard Amiga. Either you can purchase a multiple serial-port card, or you can look into a touch screen that uses another port, such as that offered by Amigo Business Systems.

Audio

What quality of audio is necessary? You can do a lot with the Amiga's eight-bit internal sounds, but if you need CD-quality, you should think about a MIDI sound box. The power of high-definition audio to improve the impact of a low-definition image is something that you might not expect, but it is in fact considerable.

If you are mixing both video and audio sources, take a look at Progressive Peripherals & Software's Video Blender, which provides for audio mixing, cross fades, and dissolves, as well as video-to-Amiga graphic transitions. It also serves as a genlock, and may be quite cost-effective for complex systems that require smooth transitions.

Scope

Will the finished product be installed at more than one site? For multiple interactive kiosks, consider CDTV—especially when multiple-site costs are a prime consideration. I recommend adding any of the following to the basic CDTV unit if conditions require: DCTV (for full-color animations); genlock and videodisc (for full-screen, high-quality video); a MIDI sound box such as the Roland CM-32P (for 16-bit, syncable, high-quality audio delivery driven by Bars&Pipes' MIDI player, the AmigaVision CDTV driver, and an ARexx script); a deinterlacer (for stable image).

Output

If the viewer needs some type of output before leaving your presentation, you may need to add a printer to your setup. If so, consider the quality of output that is necessary. Will you need to print graphics and video in addition to text? Who will replace the paper, and how will they know it needs replacing?

How about videotape output? I helped develop an interactive marketing system that Georgia Power used with prospective customers. Sitting in a dark room and using two touch screens for input, company representatives would "travel" through Georgia viewing videodisc segments on various aspects of cities and towns, along with data on the economy, interactive maps, available buildings, and so on. Their "tours" were recorded as they watched, and at the end of a session, the visiting representatives could take a video tape with them. This let them present their findings to other decision makers back home, and it extended the impact of the presentation. □

—RE ►

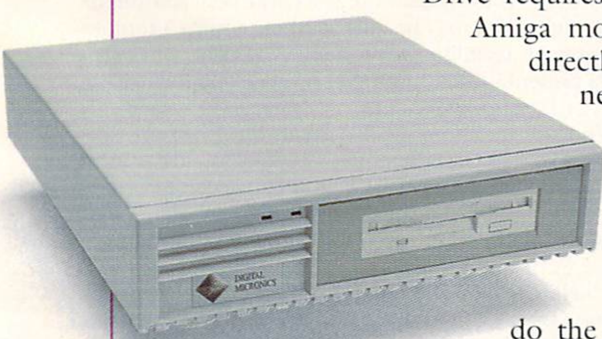
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From p. 32.

may not lend themselves to a hierarchical format. Your final design may exist partly with index cards, partly on paper, partly in tinker toys, and partly only in your program. Do whatever makes sense.

6 Carry out design and production.

Amiga graphic and video production has been covered well in other articles, but there are some points specific to multimedia—especially interactive presentations.

Before you begin, create a production chart for your work. Your chart should allow you to see all steps in the production of all deliverables, as well as what steps are prerequisites to others, and what processes can bottleneck your project.

How much branching and answer-checking you need may determine the program you use to create your presentation. Programming tools that are essentially linear, such as ShowMaker (Gold Disk) or DeluxeVideo III (Electronic Arts), may do perfectly for looping presentations, but not for anything interactive (see "Touch and Go" on p. 24 for details on multimedia software). Other programs, such as AmigaVision (Commodore), CanDo (INOVAtronics), or The Director (The Right Answers Group) are more suited to interactivity. (For more on using the new version of The Director, see "Directing a New Script," p. 37.)

The line from point A to point B in multimedia productions is anything but straight. It is filled with options and is often highly complicated.

If you need to incorporate product images in the work, try to scan photographs instead of printed images, which may give moire patterns when print dots interact with the dot-and-line pattern of video. Also, be mindful of your screen edges. It is easy to create images that you believe to be full-screen size, only to find that the outside edges do not match up as you advance from screen to screen. It is also important that the edges of the video image match with the edges of the computer graphic screens. Test the images out in an underscan mode of a monitor like the Commodore A1950.

Should you use icons or text labels for hot buttons? Of course, the nature of the job will help you decide, but as a rule, text is preferable, because very few icons can immediately communicate the title of a category. One interesting strategy I have recently seen is to use icons or images for hot spots, but to have the cursor change into a text label (or text otherwise appear) when the cursor passes over the hot spot. This will not work for touch-screen systems, but for mouse or trackball interfaces, it provides for understandable and graphically interesting screens.

In a related vein, try not to separate labels from their corresponding buttons. Putting labels on the buttons themselves both saves screen space and prevents confusion as to whether to touch the label or the button.

Because RGB computer images are sharper than video images, you should use computer graphics for any still images—and in overlay mode for still text. If your screen is not RGB, but NTSC, I suggest your text be in white lettering, with a black shadow down and to the right, and that you employ very little text (use audio and video segments for explanations).

When you do incorporate video segments, make them short—5 to 30 seconds. The only time you should make such segments longer is when you're hiding computation and file-load times. This is a good practice that demands powerful and relevant video. (A boring piece or an apology for a wait can destroy the experience for the viewer.)

Note that it is possible to economically and intelligently preload files for linear presentations using software such as ShowMaker. Because branching systems cannot predetermine what the viewer wants to see next, you may be stuck with pauses while the system loads a graphic or searches for a video segment. If you have enough RAM, load all of the next possible choices in advance, and follow it with a video segment covering your loading of the next few files.

7 Installation, upgrades, and maintenance.

Consider the setting of your presentation. In placing a kiosk, for instance, beware of reflecting lights that can make screens hard to read. Before the installation is done, you should think about updating and maintaining your presentation systems. Think about how often you will need to update the sites and how you might go about it. You may be able to update from a remote location by installing a modem. A version of GVP's Scala presentation software has been developed just for such distant updating.

Who will fix an image if a green line suddenly appears across the middle of the screen? How are sites to be maintained in general? Maintenance can be an income source for you, but you will need a plan—and possibly another contract—for carrying out the task.

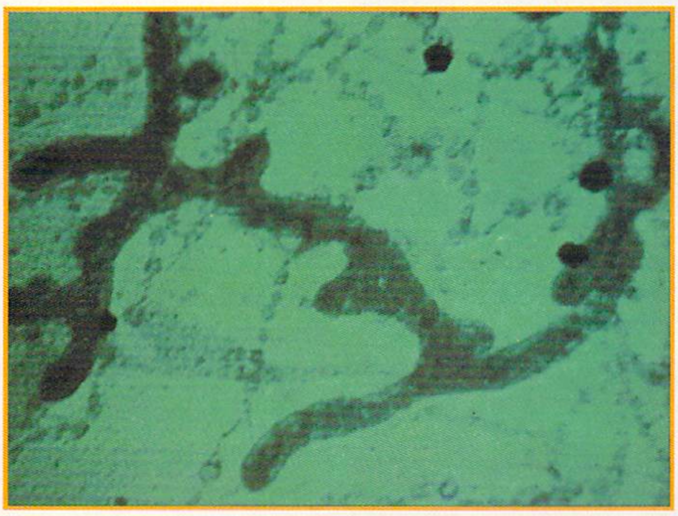
The line from point A to point B in multimedia production is anything but straight. It is filled with options and is often highly complicated. And undeniably, it is also fun to travel. When interviewing for the position of Multimedia Producer for Commodore, I was asked whether I understood what the job entailed. "Sure," I said, "I get to play with the toys." I got the job. ■

Robert Edgar is a multimedia developer for Simon and Schuster Technology Group. Formerly, as Multimedia Producer for Business Markets at Commodore, he worked on a mixed-mode CDTV and video-disc demonstration system, an interactive point-of-sale video-disc system for demonstrating the Amiga in retail stores, and the A3000 launch "Multimedia Live" video. Robert is an exhibiting artist, and has performed with his "Living Cinema" performance system throughout the US.

INTERACTIVE MULTIMEDIA PRESENTATIONS

DIRECTING A NEW SCRIPT

Powerful new additions to a multimedia-authoring standby can lend dazzling new twists to your interactive presentations—if you know the right techniques.



A program well known to Amiga artists is **The Director** (version 2, $129.95, ***Right Answers Group***). A number of prize-winning animations have been made with The Director, including Brad Schenck's "Sentinel" and "Charon," my own "RGB Hazard," and Brian Williams' "Walker II." You may be surprised to discover, though, that TheDirector is by no means designed just for animations—it is also a sophisticated tool for creating interactive multimedia applications. In fact, Commodore used this program to make the promotional demo for its CDTV project.

Like the original program, The Director 2 is script-based. Within its editor you create a set of written instructions that precisely control the sequence of events in an animation. The Director 2 turns this script into a "film" file that anyone can play by using the freely distributable "projector" player program. Although this may sound a bit complicated, it is not—especially if you know a few tips that make manipulating the program easy.

The ten techniques described below focus on interactive and audiovisual applications, and they should give you the inside information that you need to make your projects come alive. Learning these tips may even give you the freedom to experiment with creative options on other multimedia programs. *(To locate product vendors, see the "Manufacturers'/Distributors' Addresses" list, p. 89.)*

1. Take Control of Animations

Getting to know The Director 2's many powerful capabilities can help you create unique and interesting interactive projects or complex real-time animations. This program even draws praise from professionals, because it plays back animations quickly and chains together multiple animations seamlessly. You can play animations continuously or for a specified number of times, or you can ping-pong them forward and backward. The Director 2 lets you play your animations directly from a hard or floppy disk, and you can load them while other animations or sequences are running— without disturbing the flow of a presentation.

If you are creating an interactive project, use the BLOADANIM command and plan the flow to take advantage of background loading. After all, when the user hits a screen button, ►

By Joel Hagen

something should happen immediately to give instant feedback. You could include, for example, a confirmation sequence in RAM that plays in response to button selection while the desired animation or image loads simultaneously in the background. While the animation loads, the user sees continuous action, rather than "dead air."

You can also make use of The Director's full frame-by-frame control of animations. At each frame during animation playback, you can vary the pause before the next frame, trigger sound effects, initiate other display events, or wait for a keyboard or mouse response from the user. Having this level of control makes an animation more useful—you can make parts of it play at different rates, or you can hold indefinitely on a title screen.

2. Take Control of Color

By specifying RGB values, you use COLOR, PALETTE, and CHROMA commands to build or modify colors "on the fly." Use these commands to draw attention to a selection or to direct a user through a series of items. By simply specifying new color values, you can give a single high-resolution background-texture image over 65,000 variations—all without using a lot of memory.

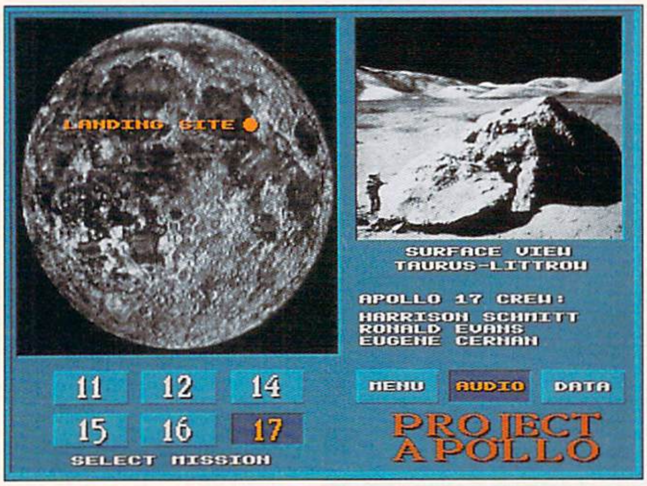


Figure 1. With The Director 2, you can create an interactive screen for a particular project (such as the Apollo mission animation above) from which images, text, and long disk-based sound samples can be called up.

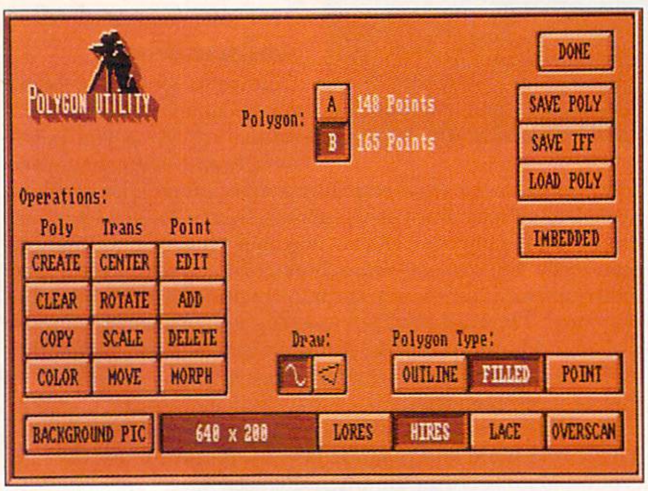


Figure 2. Use The Director 2's Polygon utility for creating polygons and movement paths.

The Director's Chroma feature lets you modify the color bias of an entire palette or portion of a palette in a single stroke, making it possible to display a full-color image, then gradually bleed out the color to gray in real time, or bleed it back in. This technique gives you a subtle effect that is reminiscent of the opening to Butch Cassidy and the Sundance Kid.

The CYCLE and RANGE commands control color cycling, even during animation playback. You can create different ranges of colors at any time and cycle them in either direction. If you cycle a range a specified number of times, you experience the economy of the technique without the aesthetic drawback of continuous cycling. A brief moment of color cycling in a glint on a title, for example, can be a subtle touch.

With the FADETO command, you can fade an image to black or any color. By using FADEMODE, you can even elect to fade or alter the chroma of only part of the palette. This command opens up interesting options for unusual effects and transitions.

3. Use Formatted Text

FTEXT is a special feature that lets you read an entire page of text from disk and display it to the screen formatted with word wrap, drop shadows, right justification, margin changes, centering, and color, font, and style changes. Embedded symbols placed in the text file provide the format changes. This is an incredibly economical way to create impressive screen displays "on the fly" during an animation. You can even use text files as "cards" in HyperCard-like applications. By setting up references within the text files to other text, image, or sound files, you can intelligently manipulate on-disk data based on navigation through the data files themselves.

4. Explore Sound and SMUS Synchronization

Although The Director 2 can play sound effects and SMUS (Simple Music Score) files during your presentations, you can add flair to your projects with other unusual audio capabilities, too. You can play large sound samples directly from disk with the LOADDISK command, thus conserving precious chip RAM. This playback is independent of other display and sound events, so it preserves the pace and flow of the sequence.

Using this method is an excellent way to add a long segment of digitized speech or any other complex sound to a presentation. An interactive project on the Apollo program (see Figure 1), for example, could play long recorded quotes while associated images or animations appeared on the screen. For special effects, you could control volume and rate of play for these sounds during playback.

A powerful audio feature that is especially important to animators is The Director's ability to synchronize the display to notes in a SMUS file. With the SETSIGS command, for example, you can display alternating cartoon frames of a drummer each time a drum note ►

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sounds in a musical score. If you use this technique carefully, it can give the illusion of complex, nonperiodic animation. In an informational presentation, words or images could blast onto the screen in perfect time to a musical score, quarter note by quarter note. You can synchronize your animations to notes, measures, or even to tracks used just for timing and triggering display events.

5. Polygon Tricks

A special Polygon utility (see Figure 2) in The Director 2's menu lets you draw filled or unfilled polygons, then rotate, scale, and move them as part of a presentation. I like the Morph feature, which tweens one polygon into another. You can load a picture, trace a complex polygon, and then morph it into another shape you have drawn or traced. I have transformed one high-contrast face into another with this RAM-efficient technique. Stored as an IFF image, each two-color face takes up about 6500 bytes on disk. Traced and stored as a polygon, each takes up about 550 bytes, a saving of over 90 percent.

Perhaps even more useful is the ability to draw a polygon and use it as a movement path for brushes, animbrushes, or sprites. You can draw the polygon, using a loaded image as reference if needed, and make the resultant movement path as complex as you desire. This is a great way to animate multiple paths over the same image. You could animate many routes of exploration in the ancient world over the same map, for example, using less disk and RAM space than if you were to create multiple animations.

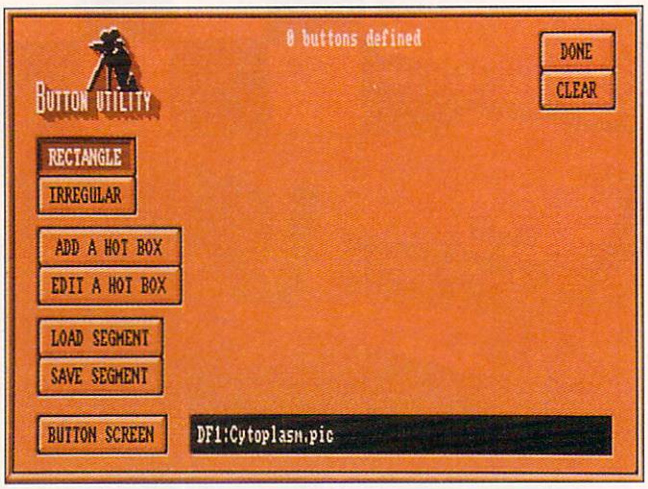


Figure 3. The Director 2's Button utility allows you to create interactive screen buttons, or "hot spots," for your presentation screens.

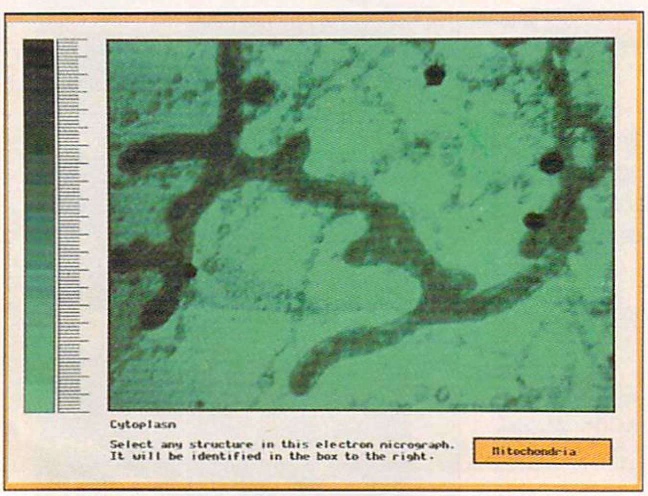


Figure 4. An electron micrograph button screen used in an interactive biology tutorial. Even disconnected areas such as the beaded microsomes can be treated as a single button.

6. Create Complex Buttons

Another useful feature in The Director 2's menu is the Button utility (see Figure 3), which makes it easy to create different kinds of buttons to use as active areas, or "hot spots," in interactive presentations. When users select these on-screen areas with the cursor, they can trigger any kind of audiovisual event. Buttons are not limited to simple rectangles or circles, either; they can be irregular and unconnected areas of any image. In a biology tutorial, for example, you could use an electron micrograph of cytoplasm as a button screen in which disconnected microsomes are treated as one button, mitochondria as another, and fatty granules as yet another (see Figure 4).

The trick to this kind of presentation involves making a second screen as a hidden mask (see Figure 5). The mitochondria on that screen are painted in a single solid color, microsomes in another color, and so on. When a user selects an area of the micrograph, the program checks the position of the cursor and correlates it with the color at that same position on the hidden-mask screen to determine what has been selected. Creating a hidden-mask screen lets you design sophisticated interactive applications.

7. Sprite Animation

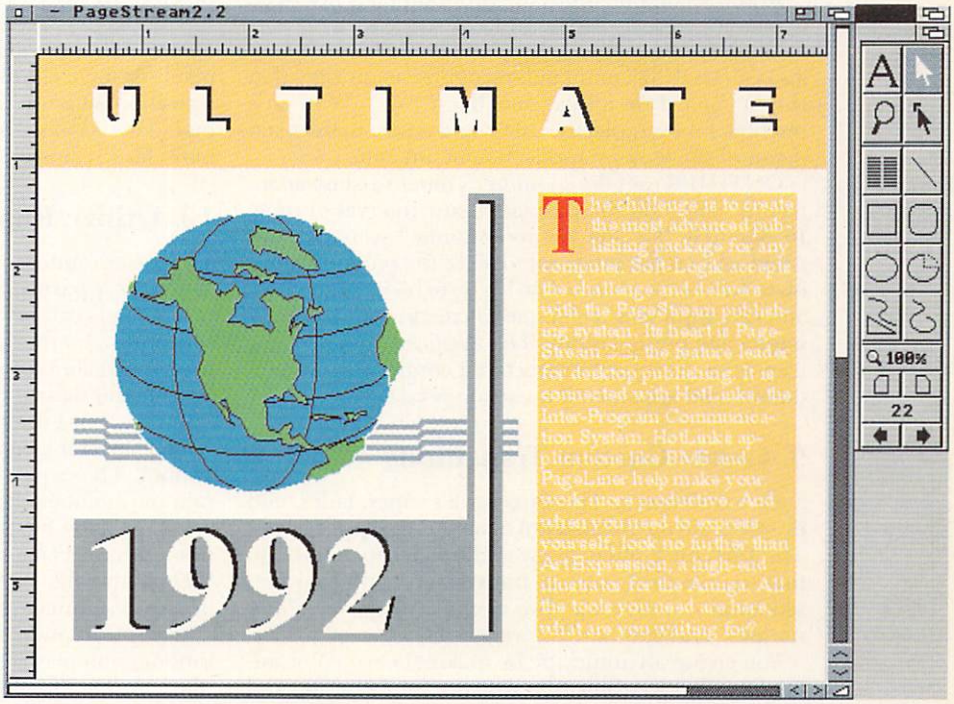
The Amiga's hardware supports a special kind of graphics called "sprites." You can move sprite images around the screen at great speed without affecting the underlying image. The Amiga supports eight sprites, one of which is the mouse pointer. You can use The Director 2 to grab graphics information from a loaded image and convert it into sprite format to use in your application. You can even control sprites with a joystick. They do, however, have resolution, size, and color limitations. Sprite animation is not as simple as other approaches, but it is a powerful trick to have in your bag. If you are interested in game development, sprites are especially worth exploring.

8. Experiment with Interruption

The Director 2 lets you use the mouse, keyboard, or timer to interrupt your program for input and to transfer control to another section. You can do this in two fundamentally different ways. In the first method, the application reaches a certain point, then waits for the user to hit a key or press a mouse button. Then, the program switches to the appropriate sequence and continues. Instruction screens in our biology applica- ►

More than Skin Deep.

INTERFACE	ProPage 2.1	PageStream 2.2
AmigaDOS windows	N	Y
AmigaDOS gadgets	N	Y
AmigaDOS scrollbars	N	Y
AmigaDOS file requester	N	Y
ENVIRONMENT		
# of Open Documents	1	Unlimited
View Magnifications	7 fixed	15–1500%
Variable Zoom	N	Y
Magnifying Glass Tool	N	Y
"No Frames" Text	N	Y
Moveable Toolbox	N	Y
HotLinks Compatible	N	Y
GRAPHICS		
IFF (24 bit)	Y	Y
ProDraw Clip – Editable?	Y / N	Y / Y
Aegis Draw – Editable?	Y / N	Y / Y
IFF DR2D – Editable?	N / N	Y / Y
EPS – TIFF/PICT preview	Y / N	Y / Y
PC: TIFF, GIF, IMG, GEM	N	Y
Mac: Paint, PICT, TIFF	N	Y
FONTS		
PostScript Type 1	N	Y
PostScript Type 3	N	Y
Compugraphic	Y	Y
Soft-Logik format	N	Y
Outlines on Screen	Y	Y
# Outline Fonts Included	2	18
Typographic Precision	1 pt	0.01 pts
Maximum Size	720 pts	183,000 pts
OUTPUT		
Amiga Preferences	Y	Y
Custom Printer Drivers	N	Y
Print to Disk	Y	Y
LAYOUT		
Templates	Y	Y
Master Pages	N	Y
Maximum Page Size	22x22 in	1200x1200 ft
Paragraph Tags	Y	Y
Snap-to-Grid	Y	Y
Snap-to-Guides	N	Y
Measurement Systems	3	9
TEXT		
Bold, Italics	Y / Y	Y / Y
Underline, Outline	Y / Y	Y / Y
Shadow, Light	N / N	Y / Y
Reverse, Strike-Through	N / N	Y / Y
Import ASCII	Y	Y
Import excellence!	N	Y
Import ProWrite	N	Y
Import WordPerfect	Y	Y



PageStream 2.2 in 16 color mode

The new PageStream 2.2 is a work of art. The first thing you notice is the snazzy new toolbox. But beauty is more than skin deep. A screenshot cannot show you the power of version 2.2. Using a common PageStream system, text speed is improved up to 500% over the previous release. The January issue of AmigaWorld called PageStream 2.1 the Experts' Choice, what will they call PageStream 2.2?

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tion, for example, could include the sentence, "Hit any key to continue." The program could display each screen, then wait for the user to finish reading and press a key before moving on.

In the second method, the program does not need to wait for a particular point in its sequence of events to check for the mouse or keyboard event. The ONKEY and ONMOUSE commands recognize at any time that the keyboard or mouse has been used. With this method, for example, the user could return to the main menu of the biology application at any time.

ONTIMER uses the computer's timer to cause an interrupt based on the passage of any interval of time. In our first "hit any key to continue" scenario, you could add a timer interrupt to make the program move on to another sequence if no key were hit in 75 seconds. You can apply this technique to creating autorunning interactive presentations. The application invites the user to sit down and interact, but continues on a predetermined sequence if no action is taken.

9. Create Custom Transitions

Such transitions as The Director 2's wipes, fades, and dissolves are the mainstay of many Amiga applications. The Director 2 offers many additional capabilities, so that you can create custom transitions to give your presentation a fresh look. Two of my favorites are "animwipes" and custom-dissolve modes.

You create an animwipe by making a two-color animation (in Electronic Arts' DPaint, for example) and then using it in conjunction with The Director 2's Stencil feature to make a transition between two pictures. You could use DPaint's Move requester to create a simple animation of a star that starts as a small dot and spins in until it fills the screen. This could then become a mask between successive images in a slide-show-style presentation. Each new image could be revealed through the current image as a growing, spinning star.

This is a great way to create transitions that look like animated brushstrokes, drips, and so on. Because this technique may not be an obvious use of the Stencil feature, The Director 2 tutorial disk includes an example animwipe script.

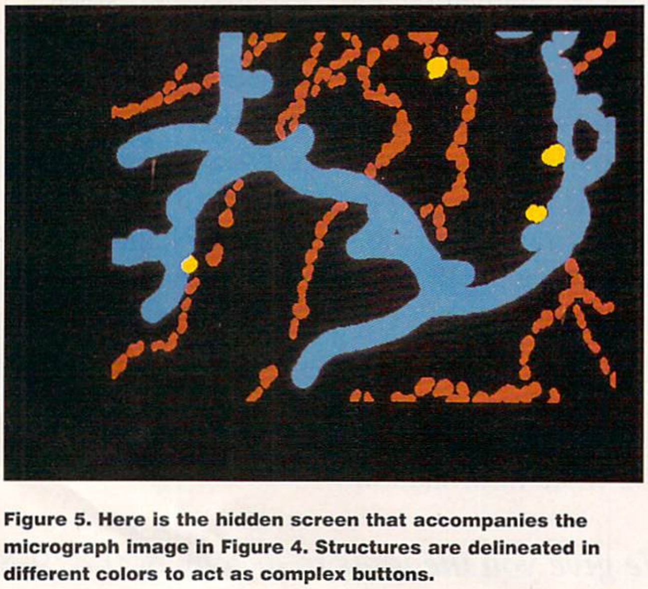


Figure 5. Here is the hidden screen that accompanies the micrograph image in Figure 4. Structures are delineated in different colors to act as complex buttons.

You can control The Director 2's Dissolve style with the DISSMODE command. Instead of using single-pixel-sized cells to dissolve one image into another, you can define the width, height, and skew of the cell. This means that one command can dissolve either single pixels or large chunks of one image over another as a transition. I like to specify cells two pixels wide and ten high, skewed to the left, to create a dissolve effect that looks like a rainstorm.

10. Utilize Randomness

The use of random numbers in animations and applications is a particular obsession of mine. Controlled randomness can introduce an organic feel to any presentation. In the Dissolve-mode transition effect mentioned above, for example, I like to define width, height, and skew as random numbers. Each transition is unique, but I use only one simple command.

The Director 2 creates random numbers with the "?" symbol. The expression ?16, for example, generates random numbers between 0 and 15. This particular value is handy for changing the RGB levels of colors randomly, as I suggested in the color-control section. Where any value or location is specified in a presentation, you can make that number random.

One of the most interesting uses I have found for random numbers is to add surprise endings to animations. As mentioned earlier, one of The Director 2's strengths is its ability to seamlessly chain animations together with no distracting pause. This feature makes it possible to create a narrative animation as a group of animation files to be chained together by The Director 2 at the time of playback.

The trick is to create multiple endings as separate animations. Each ending animation proceeds from the last frame of the single beginning animation. Just before The Director 2 begins preloading or background loading the sections it chained together, the random-number generator "flips a coin" to see which ending it will use. You never knows which ending will appear.

Variations on this idea are obvious. In interactive applications, you can introduce a great deal of variety into what otherwise would be predictable user feedback. Your program, for example, could select randomly from half a dozen different messages acknowledging a correct button choice. This enhances the feeling of interaction with a sophisticated application.

Perhaps these tips will give you ideas for enhancing your next Amiga project. Some techniques are incredibly easy to implement, while others are fairly sophisticated. Although many of these techniques rely on The Director 2's speed and memory efficiency, you may be able to modify them so that they work with other software products. Whatever software you use, if you are creative with its features, you have the key to producing unique animations and applications. ■

Joel Hagen, one of the founding members of the Right Answers Group, is the author of AW's "Accent on Graphics" column. His credits include work in art, astronomy, science fiction, and software development. Write to him c/o AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458.*

The Computer Wizard's Primer

Although computers have transformed our way of life, there's nothing magical about the way they work. Here, our wizardly systems expert demystifies the tech talk to help you become a 16-bit sage.

Glancing through a computer magazine is enough to throw the casual user into a state of shock: An avalanche of acronyms and jargon buries you in a second. And it is not only beginners who get overwhelmed. Just when you think you have mastered the intricacies of RAM (Random Access Memory), ROM (Read Only Memory), MB (Megabytes), and MIPS (Millions of Instructions Per Second), along come LANs (Local Area Networks), WORMs (Write Once Read Many), and who knows what else. How can you possibly learn it all?



Relax, you don't have to! When upgrading equipment or buying advanced computer products, all you need is a basic understanding of how they work and, more importantly, what they can do for you. Fortunately, once you shovel through the mumbo jumbo, it is not that difficult to figure out what is really going on. The following simple guide, in question-and-answer ►

By Sheldon Leemon

ILLUSTRATED BY EARL KELENY

format, should keep your tongue from freezing up when the Amiga talk turns technical.

Q: What is an SCSI controller?

A: SCSI is an acronym for Small Computer System Interface, a standard method of connecting hardware peripherals to a personal computer. Although this type of interface is most often used to connect a hard drive, it is also used for devices such as CD-ROM drives, tape drives, removable media hard drives, read/write optical disks, printers, and scanners.

The two main advantages of the SCSI interface are its fast rate of data transfer and the fact that it is largely device independent, which means that to send data to almost any SCSI device, the computer does not have to know much about the specifics of the device. A single SCSI host controller (the board that acts as an intermediary between the computer and SCSI devices) can control up to seven SCSI peripherals.

Both the Macintosh and Amiga computers use a SCSI interface as the standard method for connecting a hard drive, which means that given the proper software support, you can plug a lot of Mac peripherals directly into an Amiga SCSI controller. SCSI drives are also used on high-end IBM compatibles because of their fast access times and large capacities, although IDE (Integral Drive Electronics) drives are still the most popular in the PC world. As with SCSI, IDE drives have built-in controller circuitry, and thus need a minimum of hardware to connect to a host computer. The top speed of these drives is, however, usually lower than comparable SCSI drives.

Q: What determines hard-drive speed?

A: The main determining factors of hard-drive speed are the drive hardware, the interface hardware, and the interface driver software. Drive speed is measured by the average amount of time it takes to read information on the drive. A few years ago, drives required an average of 60–80 milliseconds (ms) to read a chunk of data. More recent models, however, have access times of 20ms or less. In general, the larger the amount of storage a drive packs into a given size, the faster that drive will be. In other words, a 200MB 3.5-inch drive will probably be faster than a 50MB 3.5-inch drive.

Although raw drive speed is important, the drive interface hardware and software also play crucial roles. The same drive may read and write information faster when attached to one controller than when linked to another. Because there is no one type of controller that is inherently faster than another, the only way to determine the fastest is through actual performance tests. Do not give too much weight to speed figures, however; differences of ten to twenty percent really do not mean much when it comes to everyday use.

If you notice your hard drive slowing down after a few months, the cause may be a condition known as disk fragmentation. When you first use a hard drive, there is enough room for large files to be stored in one area of the disk. As the disk fills up, however, the computer may have to split up large files, storing part of a file at the beginning of the disk and part at the end. A file that is divided takes longer to read, because the drive head has to move around a lot to gather all the pieces. You can cure drive fragmentation by using hard-disk organizer software (such as Centaur Software's B.A.D. or Central Coast Software's QUARTERBACK TOOLS 1.5) or by simply backing up your hard drive, reformatting it, and restoring all of the files from your backup.

Q: What is the difference between chip RAM and fast RAM?

A: You can think of memory as temporary storage space that the CPU (Central Processing Unit) uses to hold instructions (programs) and information. Most computers have only one processor, so they need only one type of work space. The Amiga, however, has additional processors—called coprocessors—that take care of tasks such as displaying graphics, controlling floppy drives, and playing music. These coprocessors act independently of the main processor and free it up for more important work.

The coprocessors also need access to temporary storage for their instructions and data. The RAM that the graphics and sound chips can use is called chip RAM. The total amount of chip RAM is limited to 512K, 1MB, or 2MB, depending on which version of the Agnus chip is installed in your computer. Any memory that you add above this limit can be used only by the main processor. Therefore, it is possible to have 4MB of memory free and still get an Out-of-Memory error from a graphics program; the type of memory that is still available cannot be used by the graphics chips.

Most Amiga computers come with only chip RAM installed, so the main processor must also use this memory for its temporary storage. Usually, the main processor and the coprocessors take turns, with one using this work space only when the other is busy doing something else. So if the special chips are busy doing complex graphics, it limits the main processor's access to chip RAM.

In addition to chip RAM, you can also install a type of expansion memory called fast RAM, which can be used only by the main processor, not by the custom chips. If there is any fast RAM present, the main processor always uses it first, in order to have its own exclusive work space. When the custom chips are using chip RAM and the main processor is using fast RAM, there are never any conflicts over memory access, and therefore neither processor can slow the other one down.

Q: What is the difference between an Agnus chip, Fat Agnus, Fatter Agnus, and Super Agnus? ►

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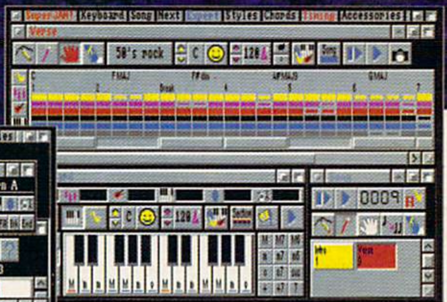
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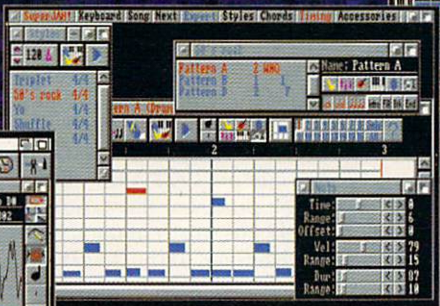
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A: Among other things, the Agnus chip determines how much chip RAM the custom chip set can access. The Amiga 1000 came with the original Agnus chip, which was rectangular and could only address 512K of chip RAM. In the first A500 and A2000 models, the Agnus chip was replaced by Fat Agnus, a square-shaped chip that was also limited to 512K of chip RAM. In later models, Fat Agnus gave way to Fatter Agnus, which was in the same square package, but could address up to 1MB of chip RAM. The most recent version of the Fatter Agnus chip was designed as part of the Enhanced Chip Set, and is therefore generally known as ECS Agnus. Although it still addresses only 1MB of chip RAM, it is needed to activate the new Display modes of the ECS Denise chip.

The latest Amiga models, the A3000 and the A500 Plus (the latter currently available only in Europe), can both handle up to 2MB of chip RAM, and therefore use a new and improved 2MB Agnus chip. To make matters even more confusing, the 2MB Agnus on the A500 Plus is different from the one on the A3000. Neither of these chips can be used directly on the A500 or A2000 because the circuit boards of these models were not designed to handle 2MB of chip RAM. However, DKB Software manufactures an adapter board, the Mega-Chip, that makes it possible to install the A3000 Agnus on an A500 or A2000 and thus boost the chip RAM to 2MB.

Q: What is 32-bit RAM, and how does it differ from 16-bit RAM?

A: The terms 16-bit RAM and 32-bit RAM refer to the amount of information that can be transferred between memory and the processor in a single operation; they do not refer to any characteristics of the memory chips themselves. In most cases, the same RAM chips are used for 32-bit as for 16-bit memory.

The limit on information transfer is determined by the physical characteristics of the processor and by the bus, the connection between the processor and the memory chips. In the A500, A1000, and A2000, the processor can grab only 16 bits of information at a time, so the hardware connection between it and the memory chips is limited to 16 bits. The A3000 has a processor that can read and write 32 bits, so its connection to memory is 32 bits wide.

Although the standard processor on the Amiga 2000 communicates in 16-bit increments, it also has a slot for advanced processor boards. What happens when you plug a 32-bit processor board into a 16-bit A2000? Because there are only physical connections for 16 bits of access, the 32-bit processor must use two operations to read or write 32 bits worth of data. The only way you can take full advantage of the 32-bit bus of an advanced processor on an A2000 is to bypass the normal system communications channel and connect the memory board directly to the processor. This allows the fastest possible access to memory. Of course, when 32-bit memory has been used up, the processor can still talk to any available 16-bit memory, including chip RAM, although at a slower rate than to its own 32-bit memory.

Q: What is an MMU, and how might it be used?

A: An MMU—Memory Management Unit—can be used with advanced processors such as the 68020, 68030, and 68040. Available as a coprocessor for the 68020, the MMU comes standard with most versions of the 68030 and 68040.

An MMU performs several functions: It can limit access to selected parts of memory, notify a program when another program tries to read from or write to protected memory, and substitute one block of memory addresses for another.

Memory protection is useful for multitasking operating systems, because it assures that a "runaway" program will not try to write to memory space that is owned by another program. Unfortunately, AmigaDOS does not yet take advantage of this type of protection. Only the Unix operating system on the Amiga uses an MMU for protected multitasking.

Monitoring specific areas of memory can help a programmer detect when his or her program tries to access a part of memory that is outside of the program space. Some programming tools, such as Bryce Nesbitt's Enforcer, use the MMU for this type of debugging.

Address translation is used primarily to gain 32-bit-wide access to Kickstart in an accelerated A2000. Reading the 16-bit Kickstart ROM can slow down some programs that rely heavily on Kickstart functions, even when a 32-bit accelerator is used. With programs such as Dave Haynie's SetCPU or with the new CLI CPU command, you can move the Kickstart program code into 32-bit RAM and use the MMU to trick the processor into thinking that this 32-bit RAM is located at the same address as the Kickstart ROM, thus eliminating the slowdown.

At this point, moving Kickstart to 32-bit RAM is the primary function of an MMU on an Amiga. If the minor speed improvement that this provides is not important to you, or if you are not a programmer or not interested in running Unix, you may want to consider an accelerator that uses the EC68030, an inexpensive version of the 68030 that does not include a built-in MMU.

Q: What is an FPU?

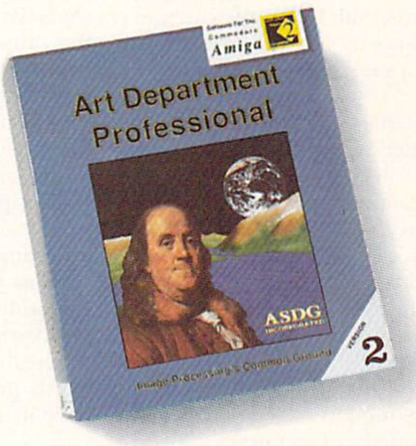
A: An FPU (Floating Point Unit) is a specialized math processor that you can use with an advanced processor such as the 68020 or 68030. The two chips typically used for this purpose are the 68881 and 68882. The 68040 processor has some built-in FPU functions.

Most CPUs perform integer math operations. This means that they can only handle whole numbers in the range of –2,147,483,648 to +2,147,483,647, which is usually enough. Some programs, however, require many decimal places worth of precision. In order to ►

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achieve that exactness, you need to perform calculations that employ a moving decimal point; this is called floating-point math. Because these calculations are complex, programs that use floating-point math are typically very slow. Floating-point math coprocessors, however, perform these calculations rapidly, thus speeding up program operation.

Only a handful of Amiga programs—including CAD, 3-D rendering, and spreadsheet—require high-precision math. Indeed, with a math coprocessor there is a very noticeable difference in the speed of 3-D graphics and animation programs such as Sculpt-Animate 4D (Byte by Byte), Imagine (Impulse), and LightWave 3D (NewTek). But other software, such as word processors, desktop publishers, and paint and music programs, receive absolutely no benefit from the addition of a math coprocessor. A good rule of thumb is that you need an FPU only if you already have an accelerator board and are very interested in 3-D graphics.

Q: What is a multisync monitor?

A: Computer monitors display pictures by scanning a beam across the picture tube from left to right and top to bottom. The rate at which this beam travels from one side to the other is called the horizontal scan rate. The normal Amiga display is created by a beam that scans at a rate of 15.75 KHz.

Most monitors redraw an entire picture 60 times per second. At a scan rate of 15.75 KHz, there is only enough time to draw about 240 complete lines during each sixtieth of a second interval. When the Amiga is displaying its 400-line, hi-res mode, only half of the screen can be redrawn on a single pass, which may result in flickering images.

To draw more than 240 lines in a sixtieth of a second, the beam has to move faster. By doubling the horizontal scan rate to 31.5 KHz, it is possible to scan twice as many lines in the same time period, which is why hi-res VGA display cards on IBM-style computers scan at that rate. Similarly, display enhancers such as Microway's flickerFixer card and the Amiga 3000's built-in enhancer boost the Amiga's horizontal scan rate to 31.5 KHz in order to create a noninterlaced hi-res display. The new ECS Denise chip also uses the higher scan rate for its four-color, noninterlaced Productivity mode.

Most monitors work at a fixed scan rate—either 15.75 or 31.5 KHz. During the time when PCs were moving from CGA to VGA displays, however, NEC introduced a type of monitor that could automatically adjust to these differing horizontal scan rates. Called "multisync" by the company, it is the only type of monitor that supports both the normal Amiga display and the deinterlaced display that enhancers provide. Such a monitor is typically more expensive than a regular hi-scan (31.5 KHz) or low-scan (15.75 KHz) monitor. Most computerists use either the normal Amiga display or an enhanced display, so a fixed-scan-rate monitor of the appropriate type is usually the most economical choice.

Most of the multiscanning monitors sold today are used to bridge the gap from VGA to Super-VGA displays. These monitors adjust to a horizontal scan rate that ranges from 30 to about 50 KHz; they do not go down to 15.75 KHz. While such monitors are compatible with enhanced Amiga displays, they cannot be used with the standard Amiga graphics output.

Q: What is a PostScript printer?

A: PostScript is a proprietary programming language for printers that was developed by Adobe and popularized by Macintosh desktop-publishing programs. Because PostScript is geared toward output, it provides desktop-publishing programs with an easy method of describing otherwise complex printing tasks (for example, printing text along a curved path).

One of PostScript's main features is a font technology that makes it possible to print a wide variety of smoothly formed text characters of virtually any size. Another major advantage of PostScript is device independence: You can print the same PostScript file on a nine-pin dot-matrix printer, a laser printer, or a typesetting machine, and each will print at the maximum resolution of which the device is capable.

Laser printers fall into two categories: those that include PostScript, and those that are compatible with the simpler Hewlett-Packard LaserJet command set. Because of licensing fees, the former is generally much more expensive than the latter. Whether or not you should pay the extra money depends a great deal on the type of software you use. PostScript compatibility will be of no use to you unless your programs support PostScript output. If you use desktop-publishing software that supports PostScript, you may find that these programs also support an alternative font technology such as Compugraphics Intellifont, which provides smoothly formed characters of arbitrary size even on nonPostScript printers.

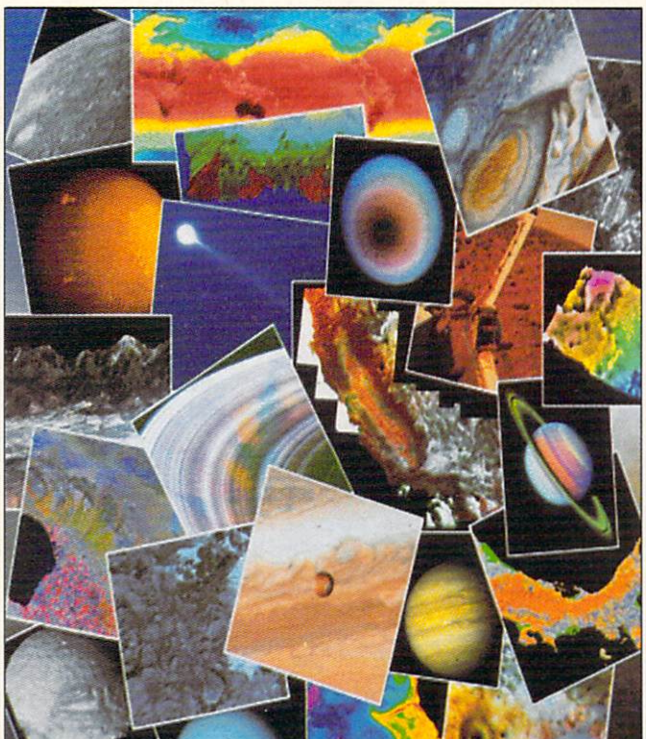
The bottom line is that PostScript is probably worth the expense only if it's important for you to have its additional included fonts, a universally recognized font library, and the ability to print your files on professional typesetting equipment. ■

Sheldon Leemon is the author of Inside Amiga Graphics *and co-author of* The AmigaDOS Reference Guide. *He is also technical consultant to an Amiga dealership called "Slipped Disk" in the Detroit area, where he answers a steady stream of questions. Write to him c/o* AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458.*

PLUNGING INTO CD-ROM

The swiftly widening pool of CD-ROM offerings provides a vast reservoir of data to quench your Amiga's thirst.

In the Amiga market, CD-ROM has made its biggest splash as the heart of **CDTV**, ***Commodore***'s consumer-oriented entertainment system. Indistinguishable from an audio compact disc, a CD-ROM disc holds more than 600 megabytes of data, equivalent to at least 700 Amiga floppy disks. If the data is further archived and compressed, the little silver platter can hold more than a gigabyte. Browsing through a CD-ROM disc can take hours.



It's easy to add a CD-ROM drive to any model Amiga that has a SCSI hard-disk interface. Such drives are readily available from many sources. *(Editor's note: Commodore has displayed, but not yet announced the availability of, its new A690 CD-ROM drive peripheral. Stay tuned.)* Some will fit in the 5¼-inch drive bay of an Amiga 2000, while others stand alone in their own box. You also will need a SCSI cable, the same one used with a Macintosh. You should have to pay no more than $700 for the drive itself, and you can get your CD-ROM collection off to a good start by buying one of the many drives that come bundled with several CD-ROM titles.

Key features you should look for in comparison shopping are the access time, audio playback, and a self-cleaning lens. You will find CD-ROM drives much slower than hard disks. For example, a 325-millisecond access time is quite good for CD-ROM, but compare that with 20 milliseconds for a hard disk. As a bonus, most CD-ROM drives also play audio CDs, even when the computer is turned off, and both internal and external models have output jacks for connections to headphones, amplifiers or speakers.

An essential piece of software links the CD-ROM drive to the AmigaDOS operating system. Once it is in place, the CD-ROM file-system software makes the CD-ROM appear as a large, read-only hard disk. If you're assembling your own system, you'll need such a third-party CD-ROM file system.

Canadian Prototype Replicas sells **CDROM-FS** ($49.95), a file system that works with several different hard-disk controllers. CDROM-FS is currently compatible with drives such as the Chinon CDX-431, Hitachi CDR-3650, NEC CDR-77, CDR-72, CDR-80 and CDR-82, the amazing Pioneer DRM-600 six-disk changer, the Sony CDU-541/6211, and the Toshiba 3201B and ►

By John Foust

3301. Compatible controllers include Commodore's A590 and A2091, the embedded controller in the Amiga 3000, GVP's Series II, and the MicroBotics HardFrame. In the future, it should also become compatible with additional controllers from other companies.

If you want a ready-made package, ***Xetec*** offers a complete CD-ROM solution in both internal and external versions, including the drive, cables, and file-system software, and it includes a Fred Fish disk CD-ROM. Either system works with the Xetec hard-disk controller card, as well as some SCSI controllers from other developers. Xetec also sells its software separately; it is compatible with any controller that supports the SCSI-direct protocol. *(To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 89.)*

Go Fishing

Two companies offer CD-ROM versions of the ubiquitous Fred Fish library. Xetec's bundles include a copy of its **Fish & More Volume I**, which contains Fish disks 1 to 370, plus about 250 megabytes of other freely distributable software. Volume I has each disk's subdirectories separately archived and arranged by category. Xetec sells a second volume that includes disks 371 to 470, with archived copies of each disk and even more public-domain software.

HyperMedia Concepts sells (for $69.95) a different collection of the Fish library, including a program for making floppy-disk copies of any Fish disk. HyperMedia has scheduled the release of version 1.4, known as **Fred Fish Online**, for January 1992. Containing the contents of disks 1 to 530, it will also have archived versions of each directory and a catalog of one-line descriptions of all the files.

As the Fish collection grows to more than 600 disks, the cost savings alone can justify the addition of a CD-ROM drive. The math tells the story: 600 disks at $3 each comes to $1800. Moreover, you benefit from CD-ROM's volume, reliability, and ease of access. Six hundred separate disks would take up nearly the same space as a small refrigerator.



Figure 1. Desert Storm destruction, courtesy of the US Military and Warner New Media.

Tapping Further Sources

Once past the Fish collection, where can you find CD-ROM discs to feed your Amiga's appetite for data? First, you can turn to CDTV, but you must be aware that while some CDTV titles will run on an Amiga equipped with a CD-ROM drive, others will not. The ones that won't are those that are designed to take advantage of the CDTV's custom hardware. For example: an animation-oriented CDTV application that relies on Commodore's new proprietary CDXL technique for playing animations direct from CD; a CDTV game that stores high scores in the credit-card RAM; or a program that checks for the existence of CDTV's custom hardware as a copy-protection measure.

Amigaphiles seldom lack for creative solutions to problems. Some get double duty from their CDTVs by linking them—via the parallel port—to the Amiga with the freely distributable Parnet software. With Parnet, the CDTV's CD-ROM drive appears as a device on the Amiga. Other users buy inexpensive, non-SCSI CD-ROM drives for the PC side of a Bridgeboard-equipped Amiga 2000.

The search for Amiga-compatible CD-ROM titles can take you into an unexpected area—the IBM PC and Apple Macintosh markets. Companies such as ***EduCorp*** and the ***Bureau of Electronic Publishing*** are dedicated to selling CD-ROM-related products, both drives and discs. There are hundreds of CD-ROM titles available for the PC and Mac. The Bureau's paperback catalog is half an inch thick, and it also contains useful side-by-side comparisons of many CD-ROM drives.

On the down side, only some of these PC and Mac titles will work on the Amiga, and it is sometimes not easy to determine which ones, for salespeople are often apprehensive when faced with questions about Amiga compatibility. Unfamiliar with the Amiga, they tend to answer "no" when the correct answer is "yes." Fortunately, it's not hard to define the characteristics of an Amiga-compatible CD-ROM. Armed with the following information, you can help the salesperson find discs that will work on your Amiga.

First, the disc must be mastered in either the High Sierra or ISO-9660 standard formats. The latter is the most popular format for data made for the PC. If a CD-ROM is listed as compatible with the PC, then it is probably formatted in the ISO-9660 standard.

Alternatively, if a CD-ROM is described as designed for the Macintosh but not the PC, it's probably formatted in the Apple Hierarchical Filing System, or HFS. So far, Amiga CD-ROM file systems can't make sense of the Apple file system, so these discs are currently unusable. (It would be possible to circumvent this limitation through software by the hybrid of a CD-ROM file system with a utility like New Horizon's Mac-2-DOS.) If it's any consolation, a PC can't read HFS disks either.

The second requirement is that the CD-ROM must contain data in a format usable on the Amiga—ASCII text, for example, or images in a standard format such as TIFF, GIF or EPS.

As a corollary to all this, the disc must not require an "engine" for accessing the data. For example, most text databases on CD-ROM must be searched using a

computer-specific program. Plain ASCII text is nowhere to be found; instead, it is indexed and compressed in a proprietary format. The access engine is often supplied on a floppy disk, or perhaps both Mac and PC versions of the engine are stored on the CD-ROM. Without the engine, you get nothing.

Another type of engine used in some cases is unlocking software. CD-ROMs containing expensive information such as demographic data, PostScript fonts, and high-quality images are often sold on a pay-per-use basis. You might, for instance, pay $100 for a CD-ROM containing only six PostScript fonts, but you can "unlock" more fonts by calling an 800 number and paying for passwords that are entered into a program running on the PC or Mac.

Other Disc Collections

Desktop-publishing clip-art collections are most often stored in one of two formats: TIFF bitmaps or EPS drawings. Good examples of TIFF clip-art collections are the **Quick Art** disc from Wayzata Technology and the **Professional Photography Collection** from Discimagery, both available from EduCorp. You get a lot for your dollar: the Quick Art CD has more than 2200 separate bitmaps scanned at 300 dots per inch. Soft-Logik's PageStream can load TIFF images without translation.

Unlike bitmap clip art, Encapsulated PostScript (EPS) files represent a standard way of storing clip art that never suffers from the "jaggies." Both PageStream and Gold Disk's Professional Page can load and position an EPS graphic. Examples of EPS CD-ROMs are the Bureau of Electronic Publishing's ProArt three-volume library and the Image Club's Art Room.

Bitmaps are often stored in TIFF, PCX or GIF formats on the PC, and most commonly as PICT files on the Mac. Using a conversion program such as ASDG's Art Department Professional, you can translate these bitmaps to the Amiga's native IFF for loading into most programs.

It's rare to find CD-ROM images stored in the Amiga's IFF format. One exception is ***ImageTects*' ImageCELS**, which contains more than 1150 texture maps and architectural images in fourteen different formats, including Amiga IFF. The texture maps are seamless, meaning they can be tiled side-by-side with no apparent edge. With these, you can give your 3-D modeling programs perfect surface maps for wood, cloth, soil, brick, clouds, and foliage.

Amiga-native data can also turn up in unexpected places. One inexpensive and high-quality CD-ROM is ***Warner New Media*'s Desert Storm: The First Draft of History** (see Figure 1). The disc contains text files, images, and digitized sound clips of *Time*'s coverage of the Gulf conflict. The text files are in an accessible ASCII format, and they include such zingers as the complete texts of Saddam Hussein's speeches. Because it is designed for the Macintosh, the images are in PICT format, but the digitized sounds are in an IFF format known as AIFF, which most Amiga sound players can handle. Priced at just $39.99, it's a worthwhile buy, even if you do not have a conversion program such as ASDG's AD Pro to handle the PICT images.

If your business uses Amigas, CD-ROMs can save you time and money. For law offices, for example, compilations of state case law are becoming available. One such is New Hampshire case law from ***CD/LAW***, updated quarterly. One CD/LAW disk contains the complete *New Hampshire Law Reports* for the past 34 years. In printed form, this information fills shelves of expensive books.

Like the public-domain collections on networks and BBSs, there tends to be a lot of cheesecake on CD-ROM. EduCorp offers the "Exotica-ROM," a digitized collection of the erotic art of Olivia De Berardinis, a well-known illustrator for *Playboy*. EduCorp also publishes the Swimsuit CD, not unlike the *Sports Illustrated* swimwear issue. Both collections contain images in formats that can be translated to Amiga IFF.

Government Data

The United States government is the largest publisher of CD-ROMs. In the past, the government released most data on magnetic tape for archaic mainframe computers, but now it is offering data on CD-ROM discs for the cost of reproduction.

Tracking down interesting government data can be as exciting as filing a tax return, but a good place to start is the ***National Technical Information Service***, which supplies a catalog of "optical media products" that includes both CD-ROMs and laser-video discs. Another good source is the ***Government Printing Office***. Among many other items, it offers the entire 1985 Congressional Record on two CD-ROMs for just $40.

Because the government's CD-ROM publishing efforts are diffuse and often carried out by individual agencies, it's best to go right to the primary source if you know you want a particular kind of data. Examples of this are census data, guides from the United States Department of Agriculture, business databases, and the United States Geological Service digital elevation maps that can be loaded into Amiga programs such as Vista.

Another good example is spacecraft imagery. In the 1980s, the Voyager I and II spacecraft generated many megabytes of high-resolution images of the outer planets. Now, the ***University of Colorado's Laboratory for Atmospheric and Space Physics*** distributes a two-disc ►



Figure 2. The University of Colorado offers your Amiga glimpses of the last frontier, as seen by Voyager.

sampler of that space imagery for just $25. More incredibly, it offers a set of 12 CD-ROMs containing images from the Voyager space probes for just $120 (see Figure 2).

Images representing the actual data transmitted from the spacecraft are stored in a generic 800X800-pixel format. The discs include image-viewing software for the Macintosh or PC, along with C-language source code for decoding and displaying the generic image format. At this time, at least one public-domain viewer is in development, and Black Belt Systems has said it will develop a voyager-image loader for its own Imagemaster software.

Voyager's cameras scanned at 800×800 pixels, with 256 levels of brightness. Also, some planet surfaces were scanned using the DigiView (NewTek) approach to generating color images. By placing red, green and blue filters before the lens and digitizing the same scene more than once, Voyager's monochrome camera produced images in true color. The most visually appealing Voyager scenes, however, are not the true RGB images, but "false color." More often than not, the filters were other colors than red, green and blue, thereby exaggerating subtle details in planetary atmospheres.

Instant BBS Sources

In the world of on-line telecommunications, a bulletin board survives either through private subscriptions or by depending on the philanthropy of an organization such as a users' group. As an additional attraction to paying customers who happen to own PC-compatible computers, some Amiga-oriented BBSs include in the library a section that's devoted to PC-related files.

By adding a CD-ROM drive and a few inexpensive CD-ROMs, an Amiga BBS can quickly create a library several thousands of megabytes in size. More than a few CD-ROMs are simply collections of the latest freely distributable programs for the PC. One even calls itself the "RBBS in a Box." Beyond programs, images, and program source code, the discs also make room for large text files such as the Bible.

Finally, a good source of inexpensive information and discs is the ***CD-ROM User Group***. It offers a newsletter as well as special deals on overstocked and out-of-print CD-ROMs, although it tends to emphasize titles for the PC.

Special thanks to Allan Purtle of Canadian Prototype Replicas and Chris Henry of HyperMedia Concepts, who gave me valuable help in researching this article. ■

John Foust is president of Syndesis Corporation. He shares his CD-ROM drive between his PC, Macintosh and Amiga, and he writes for a number of publications. Write to him c/o AmigaWorld *Editorial, 80 Elm St., Peterborough, NH 03458.*

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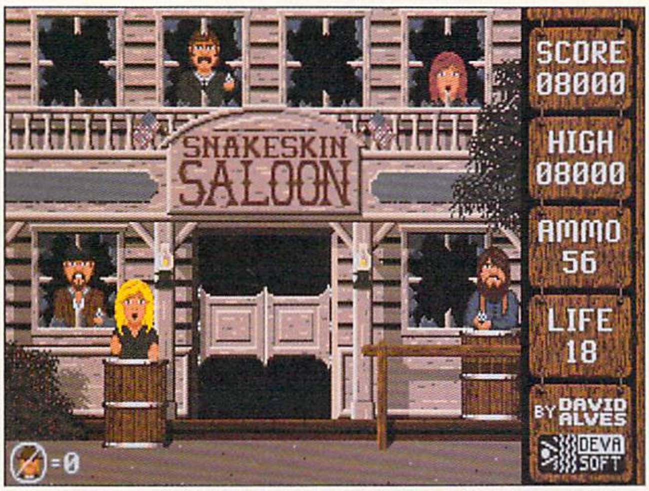
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Graphics Transfer Made Easy

#37

A continuing series of tips, techniques, and tricks for creating more imaginative Amiga graphics.

By Joel Hagen

WHILE THERE ARE several ways to exchange graphics files between the Amiga and Macintosh platforms, most people believe that all of them involve using extra hardware components as part of the process—hooking up a Mac drive to the Amiga, using a modem or null-modem cable for serial-port transfer, and so forth.

This is simply not the case. Exchanging graphics between machines is quite easily accomplished with software alone and can open powerful doors to Amiga artists wishing to communicate or collaborate with Mac artists. I frequently use a friend's Mac and flatbed scanner to import line art into my Amiga. In this column, I will describe the software involved and then go through the transfer process, step by step.

Two from Column A and Two from Column B...

The setup I use involves two Amiga programs and two on the Mac. CrossDOS is the key Amiga software required for exchange. On the Mac side, the essential ingredient is Apple File Exchange. Additionally, either Art Department Professional on the Amiga or Adobe Photo Shop on the Mac are needed. *(For information on contacting the developers of these products, consult the "Manufacturers'/Distributors' Addresses" list on p. 89.)*

CrossDOS ($39.95, ***Consultron***) is a remarkable value. It comes packed with utilities that allow the Amiga to deal with the MS-DOS operating system. (I will show shortly why an MS-DOS conversion is necessary in this process.) Using the CrossDOS installation program or copying a few files is all that is needed to set up your system with these utilities.

Two main CrossDOS features are of interest: MountMF and MFormat. Running MountMF turns the Amiga floppy drives into MS-DOS drives without giving up their Amiga capabilities. Drive df0: takes on the additional identity of di0:, while df1: adds di1:. You can invoke MountMF from an icon, from the CLI, or from within your startup-sequence. Once it is invoked, MS-DOS format disks will be recognized in either floppy drive. (Without invoking MountMF, an MS-DOS disk will show up as a "bad" disk.)

The beauty of all this is that Amiga disks will still be recognized as before. I find it handy to configure DiskMaster (Progressive Peripherals) with at least a di1: button in addition to a df0: or df1: button. This makes copying, renaming, or deleting files on the MS-DOS disk simple. Programs that read all available devices in their Load or Save requesters will automatically show di0: and di1: in addition to the other drives.

MFormat simply formats standard 3½-inch disks as MS-DOS disks. Once di0: and di1: are mounted, pop a disk in either drive, double-click the MFormat icon, and then enter which drive to format. For everything I am doing between machines, these simple operations are sufficient to make my Amiga format, read, and write to MS-DOS. That is step one.

If you now MFormat a disk, copy an Amiga image onto it, and then put that disk in a Mac II, the Mac will grind a couple of times and then inform you the disk is unreadable and ask if you want it initialized or ejected? Macs don't normally like MS-DOS disks any more than Amiga disks, you see. The solution is **Apple File Exchange**. This folder comes as a utility on the standard Mac System Tools disks provided with the machine. Once within File Exchange, the MS-DOS disk will be accepted, and its files can be translated onto the Mac hard drive. This is step two.

Two to the Rescue

There is still a problem, however. Now you are on the Mac and you try to load your Amiga image into, say, MacPaint or Pixel Paint. No success. The image format is unrecognizable. The solution is **Art Department Professional** ($240, ***ASDG***—version 2, $299 or $75 upgrade fee) on the Amiga side, or

Using a software-only process, you can exchange images without fuss between Amigas and Macs, and broaden your range of graphics options considerably without extra hardware expense.

Adobe Photo Shop ($895, ***Adobe Systems***) on the Mac.

Art Department Pro is one Amiga program I consider indispensable. I use it for all manner of image conversion and modification. One of AD Pro's graces is its modular design. You can add new Loaders, Operators, and Savers to the main program at any time. ASDG's **Professional Conversion Pack** ($90) contains, among other things, a TIFF Loader and Saver that you can add to AD Pro. (TIFF is a common image format used on the Mac.) You can save an Amiga IFF image as a TIFF file from AD Pro to an MFormatted disk in drive di0: or di1:. That TIFF file will be recognized by any standard Mac paint program. This is step three.

Alternatively, if you have Adobe Photo Shop on the Mac, you can leave your image in its original IFF form. Among the many selectable image formats in Photo Shop's Load requester is Amiga IFF/ILBM. Problem solved. Once opened, the image can be resaved in any of Photo Shop's other formats. By the way, if you have never used Adobe Photo Shop, give yourself a treat. Photo Shop 2.0 running on a 24-bit Mac II is truly elegant.

For our purposes, however, we'll keep things simple as we step through the entire process for taking an Amiga HAM image into Adobe Photo Shop running on an ordinary Mac II. First, invoke MountMF, either by clicking the icon or by including it in the startup-sequence. Insert a disk in drive di1: (df1:), double-click the MFormat icon, and enter di1: in the requester.

When the disk has been formatted, run AD Pro. Load the HAM image and then click in the Number of Colors button, selecting 256 instead of HAM. Click the Execute button to convert the picture to 256 colors from the original 4096. An ordinary Mac II cannot display 4096 colors simultaneously because it is limited to a maximum of 256. The illustration accompanying this column shows a HAM painting before and after conversion to 256 colors. If your image is 32 colors or less, no conversion is needed. The image can be saved to di1: as an IFF or a TIFF file.



The HAM painting "Floral" (above) is shown before and after conversion to 256 colors in AD Pro for transfer to a Mac II. The actual 256-color image is somewhat cleaner than this version, which is redisplayed in HAM.

On the Mac II, open the System Folder and then open Apple File Exchange. When the program's interface screen comes up, insert the MFormatted floppy. The Mac hard drive contents will show up in a window on the left side of the screen, the floppy's contents in a window on the right. Select the image file from the floppy. Its size will be displayed and the Translate button will be highlighted. Click that button to transfer the file from the floppy to the directory you selected on the hard drive.

In Adobe Photo Shop, the Load window has a requester labeled Open As. Select Amiga IFF/ILBM or TIFF, depending on your AD Pro save. That's all there is to it. Reversing the process, Photo Shop allows you to save images in IFF/ILBM format, selecting the number of bitplanes. Typically, you would select 4 or 5 for direct transfer to the Amiga, or choose TIFF and then load the image into AD Pro. ■

Joel Hagen's credits include work in art, astronomy, science fiction, and software development. Write to him at 10512 Sawyer, Oakdale, CA 95361. Please include a stamped, self-addressed envelope for a reply.



On Top of the Job

Get your video production work in on deadline and on budget with these valuable time-and-money-saving tips.

By Derek Grime

THIRTY-FIVE ANIMATIONS in seven days. That was what we agreed to deliver. Commodore's new advertising agency wanted our studio to produce a 30-second TV commercial that would showcase the Amiga. Armed with the slogan "The Incredible Creativity Machine," we set out to get TV viewers excited about the Amiga.

At the preproduction meeting, we determined that the length of every sequence would be from .5 to 1.5 seconds. That meant we needed to create 35 custom animations in which Amiga applications would star.

The deadline was tight, and the pressure was on. In one week my studio used more production tricks than it had in the past year. The following techniques worked great for us, and they may help you in your own Amiga-video adventures—whether for fun or profit (or both!).

STORYBOARDS AND BULLETIN BOARDS

The first step in any video project is to create a comprehensive storyboard. Instead of relying on the old pen-and-ink method, we used **DeluxePaint IV** ($179.95, ***Electronic Arts***) to quickly produce storyboard frames in black and white. By computerizing our master plan, we could easily make revisions later on. And with a project this size, changes were a way of life.

DeluxePaint's Print requester includes a built-in size gadget that let us draw frames the size of the full screen. We then used the print function to scale them to 50 percent. (Our output was to a 24-pin dot-matrix printer.) Next, we cut each frame to size and placed it on a small four-by-five-inch card. We tacked about 40 of these frames to a large bulletin board that became our production chart.

Whenever we started a new job, we marked the frame with a yellow highlighter. As we completed each one, we marked the card with a big red X. We also tacked production notes under each frame. These messages included special information, such as the ordering deadline on a piece of software, or the name of an animation that was on hold pending client approval.

The system worked perfectly. Whatever the size of your project, this is a great way to stay organized. We always knew exactly where we were on the job. We gave copies of each frame to the agency for its use in preparing its own board to present to Commodore.

CUT CORNERS

In a production environment, not only is organization vital, but so is speed. You must learn to save time without sacrificing quality. Here are some tools that helped us do just that.

To create the commercial's 3-D sequences, we used **LightWave 3D**, which comes bundled with the **Video Toaster** ($2495, ***NewTek***). We saved all individual animation frames to the hard disk. Although most people usually record animations frame by frame, we chose not to follow tradition. With our aging videotape recorder, a frame-by-frame job would have been not only time-consuming, but also prone to foul-ups. Instead, we took our pictures and converted them to DCTV format.

DCTV ($495, ***Digital Creations***) comes with software that lets you use one command to convert an entire directory of numbered 24-bit IFF pictures to DCTV format. The beauty of DCTV is that once you activate it, you can use any regular piece of Amiga software to display (but not alter) your pictures. Boot up DeluxePaint, for example, then load the files and compress them into an animation. (Make sure the images are numbered in order, such as pic01, pic02, pic03, and so on.) From the Picture menu, select the Load function and click on the first file in the series. Then set the Number of Frames gadget to equal the number of pictures.

When you now press Load, DeluxePaint loads all frames and transforms them into an animation file. This you can call up and view in DeluxePaint, as long as the top menu strip is turned off. If it is on, the strip gets in the way of the DCTV process, giving you an on-screen mess. You can show DCTV animations nearly as fast as regular Amiga animations, and you can vary their speed.

DCTV is a fine product; its only drawback is that the pictures it displays do not look quite as good as the output from devices such as the Toaster. If you want to convert your pictures to DCTV format, make sure the client is aware of the variations in image quality. It did not make any difference to our client, and it saved us an entire day in production time.

There are dozens of other video-production programs available for the Amiga, some of which can cut corners in ways you might never anticipate. **Doug's Color Commander 2.0** ($49, ***Seven Seas Software***), for example, gave us just the effect we needed in one segment demonstrating a paint program's ability to manipulate a picture quickly. This product let us ripple the palette with the mouse in real time. With this kind of sequence, ►

we could record live in the studio—a practice generally unheard of in animation production!

Don't forget the old standbys, either. Basic functions such as color cycling often can get the job done quickly and easily. You can also bash together cut-out animations in no time. The "Monty Python" look (see the illustration) is still popular and effective. No one need know how easy it is to do.

TO THE LIBRARY

Another thing to remember when you are in a production crunch is not to reinvent the wheel. Most Amiga animators have disks full of creations. Why not put them to good use? If you ever have to fill air time quickly, you can call on these resources in an instant.

The agency wanted us to create a variety of graphics looks; luckily for us, its representatives approved some spots we had already completed. In fact, a couple of these animations were four years old. Of course, we needed to revise them to bring them up to date, but using them saved countless hours of work.

If you do not have a collection of your designs, start saving your work now. Whenever you create a graphic, a 3-D object, or an animation, make sure that you keep it on disk—even if you think you will never use it again.

If you have a library of your work, keep it organized. Tossing old graphics images or animations in milk cartons will not help you when you need to find something in a hurry. Use an existing database or try one of the specialized programs that log your disks for you. **ImageFinder** ($65, ***Zardoz Software***) is particularly good. It has a flexible user interface and, best of all, shows a tiny version of each picture in shades of gray.

When the crunch comes, don't forget your friends. By calling other Amiga aficionados, I gathered several extra sequences. Although the agency liked the 3-D mirrored spheres that we all have seen in product demos, our studio had never done that type of work in house. By making a few phone calls, we secured the rights to some fantastic 3-D animations. Get a signed release form, though, before you use someone else's work.

You should also avoid the trap of reselling public-domain artwork. Much of what is available free from local or national bulletin boards contains copyright characters, artwork, and personalities. More than one Amiga studio has found itself in legal trouble for using what it thought was public-domain art in a commercial presentation. The safest route is to avoid the public domain entirely. Besides, if you ask politely and enthusiastically, many computer artists will give you permission to use their work.



Simple "cut-out" animations can be assembled quickly and put to effective use—as with this "Monty Python" look.

EXPECT THE UNEXPECTED

My final tip may make me seem paranoid, but I am actually being realistic: Be prepared for anything to go wrong. Although we had checked most of our segments' color on an NTSC monitor, we did not try them all until nearly the end of the project. We were shocked to discover that most of the games we had chosen for the commercial rolled vertically when we recorded them to tape. This problem had nothing to do with the Video Toaster we were using—in fact, it is our encoder of choice. The difficulty occurred because the games did not follow Commodore's programming guidelines.

When a potentially dangerous glitch throws a curve in your plan, call a technical-support crew. Although you may find that you are the only person on the planet who has ever had that problem, sometimes you can discover a way around it. We overcame our difficulty by recording the problem segment with a friend's **SuperGen** genlock ($749.95, ***Digital Creations***) that did not display the same rolling.

In any case, do not let the demons inherent in NTSC catch you unaware. As a rule of thumb, check your colors for integrity, and do not overlook your resolution. Video cannot handle a high-resolution black-and-white software interface. We had to dump some favorites because they ran only in high-resolution mode.

Be ready to handle changes in your game plan. Always remember for whom you are working—and learn to anticipate how they may react. You must remain especially flexible with your ideas. Your thoughts and those of your your client may not be the same. For example, we were taken aback to discover that our chosen music program for the campaign did not register as music software to the average person. We had to mock up some basic staff-and-notes type of software screens at the last minute.

Of all the problems your may face in your video project, none is as disastrous as losing all your work because of media failure. Make sure you back up your projects at every opportunity. Magnetic fields are everywhere. In the city of Toronto, the subway has even been known to garble tapes and disks.

To cover ourselves, we made three copies of the entire job—one on the hard drive, one on cartridge tape, and one on a batch of disks. Those of us who have lost work at the last minute because of media failure probably already follow a cautious back-up policy. If you keep only a single copy, you are in danger of learning the hard way. The odds of losing your data increase in proportion to the shortness of the deadline. Don't ask why.

If you have a good starting plan, the proper tools, and an ability to be flexible in an emergency, you can create the impossible on your Amiga. It worked for us. The commercial is now on the air and has been getting rave reviews. Both the agency and Commodore are happy with what we created, and they appreciate the fact that it was on time and on budget. Best of all, it seems to be selling more Amigas—which is what really counts! ■

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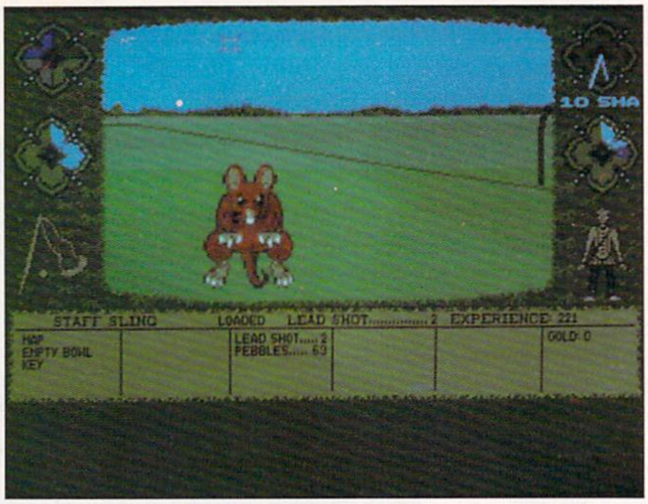
THE GAME PRESERVE

Sleeping Gods Lie

By Peter Olafson

Now here's a splendid role-playing game that's strikingly different from almost anything around. **Sleeping Gods Lie** (from England's Empire label, by way of ***ReadySoft***, $49.95) should be the sleeper hit of 1992. It's as big as Texas, easy to play, good to look at...and surprisingly light on its feet.

In contrast to the multicharacter, square-based RPGs from companies such as SSI, SGL is a solo adventure in a free-flowing, filled-polygon/bitmapped environment that most recalls Data East's classic, Drakkhen.



Can you find N'Gnir and bring peace to Tessera?

In this real-time adventure, you roam the eight regions of the troubled kingdom of Tessera—each with six sizable subregions—in search of N'Gnir, an old god rumored to slumber in a distant part of the country.

Naturally, it's a hostile world out there. You're no sooner out of your modest home (love the flickering torches beside the door and the picture on the wall) than guys with bad posture and shaved-side haircuts start lofting pebbles at you. Very hip, Readysoft. SGL's monsters aren't designed with Drakkhen's what-will-they-throw-next creativity, but they're a spooky bunch nevertheless.

Of course, you can fight back, first with the pebbles and shuriken that you find inside your house, and later with all the arms and ammunition you find as your slain enemies go up in flames.

The game sports a nice, but by no means overwhelming, array of weapons, armor and special items. Indeed, it's the *only* game of its type I've seen that incorporates realistic use of ranged weapons—virtually the only kind included here. You'll quickly learn to use the mouse pointer to "lead" your enemy with your fire, estimating his distance and the necessary arc to produce the telltale digitized grunt that indicates success. You'll need to be persistent; these fellows know enough to retreat (at least temporarily) when struck.

Inventory management is agreeably basic. Everything you have, as well as your condition and the time, is arrayed around a central play window; there's no need to abandon your perspective except to sleep. To pick up an object, simply roll over it. To increase your food supply, just walk up to a fruit-bearing bush or tree (you can see the berries)—and note the good use of scaling as you do.

SGL is also like Drakkhen in that more care has been taken with the environment than the story. You fight the characters who move. You talk to the ones who don't—or, rather, they talk to you. The subquests typically involve finding an object in one place and using it somewhere else.

In Drakkhen, that seemed a hole in a brilliant fabric; here it seems perfectly in tune with SGL's mild demands on the gamer. It's nice to play without the standard RPG tasks of in- ►

Crib Notes

By Peter Olafson

This month we'll join Jake "Lucky" Masters in *Dynamix*'s Heart of China ($59.95).

It doesn't take much work to get Chi to show up at the bar at the start, but getting him to fly is a bit trickier. Despite his disbelief, he's a logical man. Maybe he just needs an illustration (which you're equipped to provide, if you found the paper in the street outside). Try using it.

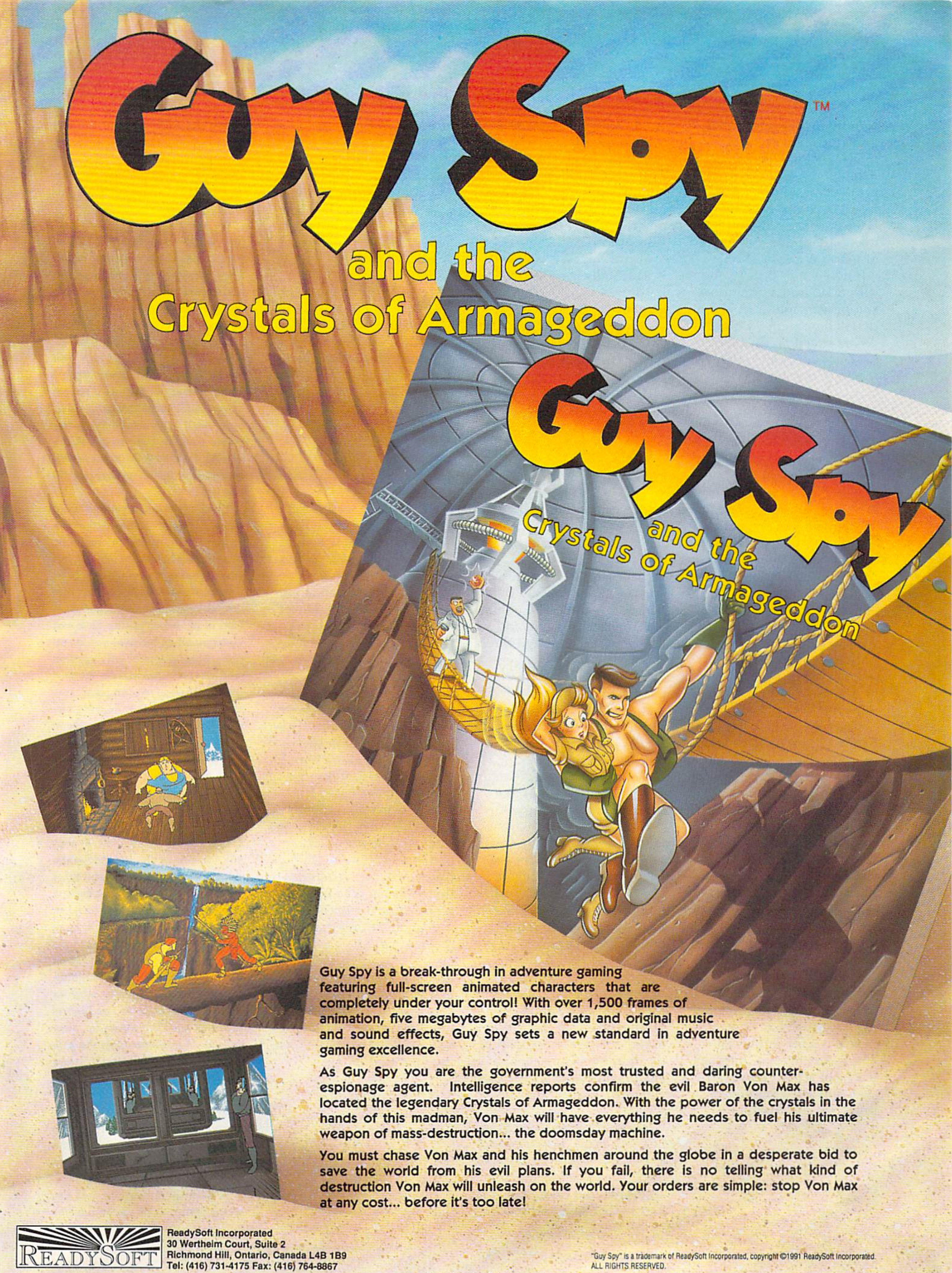
Among your first tasks after joining up with Chi is collecting some seagull doo-doo for Wu. The seagull is at the docks, of course, but the doo-doo requires a little...ah...prompting. Chi has a classic laxative in his inventory.

Getting out of Hong Kong can be nasty, too. The fake passport Wu gives you is a red herring, and its use will bring your game to a swift end. Then again, you can use Lucky's thick-wittedness to his advantage with the impatient immigration agent. Be a real pain in the butt.

There are two ways to get into the fortress. Chi can go through the front door—provided he's roped the cow and bribed the peasant for his clothes with tobacco and food—and then help Lucky over the wall from within with the grapple and rope. The tougher option is to go in via the sewer to the left of the front gate. You'll need the crowbar (hanging almost invisibly on the left wall of the plane) to pry apart the bars, and be sure to time your movements to the guard's. (Make your move when he's out of sight.)

What, more sewers? I *said* it was tougher. Lucky's lighter can take care of the darkness, but you'll also need to grab the beam in one of the sewer rooms to widen the hole in the ceiling. ►

To locate vendors of the games reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 89.



Circle 40 on Reader Service card.

ventory management, character maintenance and intensive note-taking. And, if you observe ordinary prudence, you won't get killed over and over again. (However, you will find it necessary to draw some kind of map.)

There's very little wrong with SGL, and a great deal stunningly right with it. The detailed bitmapped graphics are excellent (just look back at your home after leaving), the music is sad and beautiful in a beastish way, and the page-turning storybook sequence at the start—even if it's a little bumpy—sets a perfect tone (as well as evoking pleasant memories of Faery Tale Adventure).

Moreover, SGL is friendly. It installs happily on a hard disk, runs on the Amiga 3000, and, although it doesn't permit task switching, I could keep ProWrite 3.01 in memory on my three-megabyte machine without creating a problem.

Indeed, the game's only remarkable oddities are the lightening of the screen as you approach the border of each region—the borders are laid out—and the irrational refusal to readmit a departed character to a region.

If you're tired of waiting for the sequel to Drakkhen, or of waiting for any good new RPG, you'll love Sleeping Gods Lie. I recommend it wholeheartedly.

BARBARIAN II

By Peter Olafson

Barbarian was the game that set the style for ***Psygnosis's*** arcade classics to come. True, it had a clumsy mouse-driven interface. True, it was slow as molasses in January. And true, it was prone to graphic glitches that would place your character (the musclebound barbarian, Hegor) walking on thin air.

But it was a bright light after the false starts of Brataccus, Arena and Deep Space—those early, awkward offerings that made English Amiga games seem as peculiar as English humor. It had an urgency that drew me in deeper in deeper, and I played it incessantly through the latter part of 1987.

The long-awaited **Barbarian II** ($44.99), released late last fall, doesn't quite qualify for landmark status, but it is an exceptionally well-made arcade adventure that bears the faint stamp of the earlier game and the indelible mark of the gaming technology Psygnosis has evolved over the intervening years. The awkard mouse interface has been replaced by a joystick and a few simple keypresses. The scrolling is smooth and often in parallax. The game seems bug-free. And these are the least of Barbarian II's virtues.

Evidently Necron, the evil fellow you put down in Barbarian, has a little life in him yet. You'll pursue him and his lieutenants through three disks filled with forests, caverns, a town, a castle, a dungeon, and finally to Necron's temple. They're all rendered in a luminous palette that recalls The Killing Game Show and makes the 32 colors employed look like 256. (Barbarian II has that distinctive Psygnosis glow.)

Like the original, Barbarian II is a horizontally scrol ling beat-'em-up —but not just that. For one thing, it permits movement in and out of the screen, so some scenes actually run parallel or overlap others. For another, it's not all fighting: The third level, the village of Thelston, is basically a mall where you can knock off the tough act and stock up on goodies and gossip in the stores and inns. (Then again, you can be as nasty as you want, but you may be sorry!)

Aside from the usual array of death traps, weapons and enemies (50 of 'em), Barbarian II provides tools such as a grapple and hook, keys to pick up, a chain and switches to pull, and secrets to reveal. It's easy to see the influence of games such as Shadow of the Beast II here.

Indeed, this game isn't much like Barbarian at all. The only obvious holdover is the percent-completed figure and Hegor himself—although he's half the size of the original character.

The ending sequence can be turned off, and on repeat plays, the game loops back to the beginning of the action (so you don't have to sit through a long intro, a la Shadow of the Beast II). Alas, it won't go on hard disk—big surprise, eh?—but it apparently uses such memory as it finds. On my three-megabyte machine, there was almost no disk access after the initial load.

The only thing that I find really lacking here is Barbarian's intangible sense of urgency. Barbarian II is a fine game, and Psygnosis fans will like it whether or not they've played the original. But there's no time like the first time. ►

No one ever rescued the girl from the fortress in the movies without creating a distraction, and you're not going to manage it here. Just knock over the lamp in the dining room.

No, there's no way to stop Kate from being bitten by the snake. (After all, the whole next part of the story is devoted to curing her.) So just shoot 'em. Barring the door first will gain you some time.

There are a few ways to get out of the fortress as well, but all involve the World War I-era tank. You can go the legitimate route (there's an ignition key in the guard house) or you can hotwire this baby. However, you'll need something to pry off the ignition plate to get at the wires. Either the knife (in the cook's bedroom) or the crowbar should do just dandy.

Some of the anti-arcade folks are bound to have trouble with the tank section. (It took me forever.) Yes, you can skip it without penalty, but you just know it's going to gnaw at your gut for weeks if you do it that way, so here are some suggestions: First of all, listen to Chi; he is not guessing when he gives you directions. Second, look at your position relative to the fortress on the first outdoors screen after you land. This should stop you from making any wrong turns (and there are several possibilities).

It all comes down to some sensible driving and confrontations with two tanks. Your first task is to reach that first hairpin with all due speed. Drop your speed just before the curve—be sure you can always see the rim of the dropoff while turning—and then pivot and blast the tank blocking the next section of road. Give the hulk a wide berth on the left, as it's easy to get hung up here. Once you do so, and round the curve beyond (and bear left at the junction), it should be smooth sailing until you have to stop for the cows. As soon as Chi reports that the tank is coming up, turn around—if possible using the side road on the left—and blast it before it blasts you.

Kate's not doing very well. She needs attention that the inept Lucky can't provide. So send him for help, and have Chi set up the tarp and the blanket and apply the herbs and his Shaolin healing ways.

In Katmandu, you'll need to get on the good side of a lot of people. ►

Fantastic Voyage

By Rob Hays

A change of scene awaits as you begin your **Fantastic Voyage.** Based on the novel and movie of the same name, this game from ***Centaur Software*** ($49.95) places you inside a miniature submarine that has been injected into a dying scientist. Your must navigate through his bloodstream to the brain and destroy a life-threatening blood clot there. On the way, you need to find the nine pieces of the laser that you'll use, all the while combating the body's defenses.



Virus protection of a different sort.

Navigating your lilliputian sub through the cavernous blood vessels requires constant attention. It's easy to miss important objects in the gloom, and running into obstructions (this scientist must live on a very high cholesterol diet) is fatal for you.

Fantastic Voyage is refreshing in that it was developed on the Amiga, and not ported from another machine. The graphics were done with DeluxePaint III, and the programming is in assembly language for maximum speed and smoothness.

Still, this is basically another grope-through-a-maze, shoot-at-things-that-move arcade game. Like others of its genre, it has no provision for saving a game in progress, although high scores are maintained.

The game requires a joystick, plays properly on the Amiga 3000, and works under Workbench 2.04. It provides 23 minutes of music, which will play continuously if your Amiga has at least one megabyte of chip RAM. While the program can't be installed on a hard disk, switching between the two floppies is kept to a minimum.

Fantastic Voyage may not teach you much anatomy, but its novel setting will keep you entertained for hours.

Space Ace II: Borf's Revenge

By Peter Olafson

Remember Dragon's Lair? Remember the fluid, full-figure animation, crisp sound, almost-like-the-laser-disc play, and all the interesting ways to die? Four years and three games later, all those wonderful qualities remain fully intact in **Space Ace II: Borf's Revenge** ($59.95, ***ReadySoft***).

Space Ace is the futuristic equivalent of Dragon's Lair's Dirk Daring—a strapping blonde god out to save Earth from the evil Commander Borf (a blue version of Popeye's nemesis Bluto) and his dread Infanto Ray. The ray turned Ace into a distinctly nonstrapping (and rather whiny) little fellow named Dexter, but he's still able to return to being Ace temporarily.

The first Space Ace game two years ago ended with Borf on the receiving end of the ray, and this one opens with the restoration of baby blue to his adult size by a gang of his goons. And then we're off, at breakneck pace, through 27 chained scenes—almost all drawn from the remainder of the original laser-disc game. (I'm told the ending is new animation, however.)

This is no less than a stylish, mildly interactive cartoon overflowing with sound and visions, and what can I say? It's great fun to watch. Too bad the stuff on TV isn't this good. The animation is liquid and so fast that, in some scenes, it's a challenge to keep up with the game. The artwork has the distinct Walt Disney feel of earlier releases—Space Ace creator Don Bluth is a former Disney animator— ►

For starters, you should be nice to Ama—make that as nice as possible, given the range of jerky things Lucky has to say—as she can be helpful in more ways than one.

For instance, she'll rescue you if you are taken prisoner a bit later in the game, and you can drop her name at the Lama's to good effect. But first you have to get in to see him. He doesn't see just *anyone*, after all. But if he thought you were somebody... (Actually, you'll have to visit him twice before he says anything worthwhile.)

Kubla can be a real stickler about that gasoline for the Yankee Eagle. You can get it by taking him up on his request—he wants to go with you—and then skipping town. Or you can treat him like the child he is, and find a beguiling toy to pacify him. The cigar box here is the starting point; you'll need to combine it with Chi's chopsticks and coins first. Nice little car!

Ah, you can't launch your plane off a cliff. You need the villagers to turn it around, and to do that, you must recover the scroll from Bojon. Sardar can help, with little oratory from our pal Lucky ... and a certain weapon.

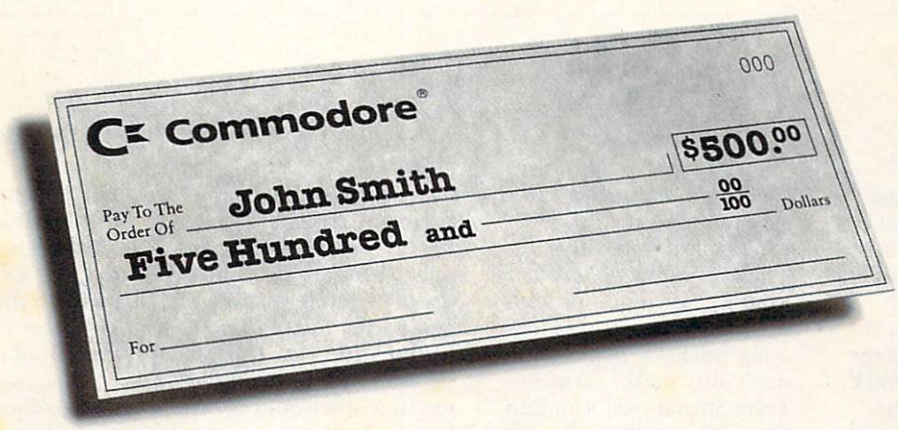
OK, you're in Istanbul. There are several places to muck about in here—chat up the mechanic, for instance—but the first major thing you need to do is get on the phone to Lomax at the officer's club. (It may help to have checked in with him by telegraph from Katmandu.) Don't get drunk first, and drive a hard line while bargaining with him.

It seems Lucky has friends everywhere. Eventually he's captured by the nabob's guards, and I'm afraid there's nothing you can do about this, either. (Kate can just cut out and take the Orient Express, but that's poor payment for Lucky's trouble—and a rather short game to boot.) To get him out, you'll need money, and to get money, you'll have to have Kate pawn her locket. Ask for 150 sheckels, but settle for 105. (It's all you can get.)

Next time, we'll get through Istanbul and onto the OrientExpress.

If you need help with an adventure or role-playing game, or if you've discovered something odd or wild in one of them, you can write to me at: 25 Belmont Ave., Madison, NJ 07940. (I promise not to move again for at least a year.) ■

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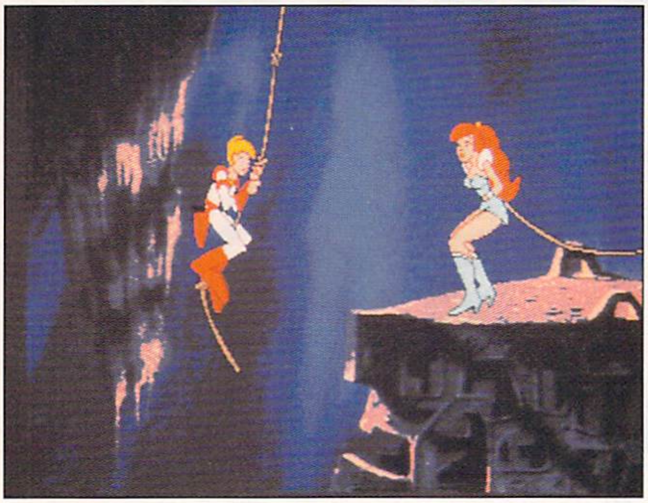
and the explosions look great. The Amiga was made for this sort of thing.

As always, character control is limited. You move the joystick in one of the four cardinal directions to direct Dex/Ace, or hit the fire-button to shoot off your laser pistol or transform at one or more critical points during each scene.

If you choose the direction correctly and time the move right, you're carried into the next scene. If not, as is often the case, you're treated to a scene of being pounced on, devoured, carried away, or otherwise polished off. Three strikes, and you're out. The manual is some help here, with broad hints for each scene, and you can save your progress after a given scene by tapping the S key.

I do have a couple of caveats. The Amiga version of Space Ace II doesn't install on hard disk (although the IBM, Macintosh, and even the Apple II GS versions do). That's a problem not so much because of speed—the loads are quite fast—as the potential for wear and tear on the five game disks. (I couldn't back them up with AmigaDOS tools.) Moreover, the game was developed under 1.3, and the docs—with one paragraph devoted to theAmiga—don't say anything specific about running under 2.0. (A ReadySoft rep said he didn't have any reports that it *didn't* work.)

Delightful as the animation and sound may be, the gameplay hasn't changed appreciably since Dragon's Lair turned up in 1987. Borf's Revenge *is* fun, but it's fun of a rather linear, trial-and-error variety. It's probably time to take this series in a new direction—one that's not necessarily on the joystick.



It's Dexter to the rescue!

Team Suzuki

By Joe DiCara

On the back of the game box, ***Konami*** claims that **Team Suzuki** ($39.95) is a two-wheeled flight simulator. That didn't make much sense to me at first, but the moment I drove one of the Team bikes down the track and negotiated that first bend, I understood. I never thought of motorcycles as earth-bound airplanes, but that's the look and feel this simulation creates. Indeed, a two-wheeled flight simulator!

Even with the best of airplane simulators, chasing MIGs or other bogeys eventually gets boring, right? Sooner or later you drop to the deck and try weaving and rolling around and under skyscrapers and bridges. Remember the head-turning field-of-view effect from making corners in Ferrari F-1? Well, the designers of Team Suzuki have combined and expanded on these ideas, creating an unusual visual effect.

Your over-the-handlebar view is like skimming a race car just above the ground, banking and careening above a narrow ribbon that winds between grandstands, scoring towers, trees, and other trackside objects. You don't just "make" turns in Team Suzuki; you lean into them. Neat stuff!

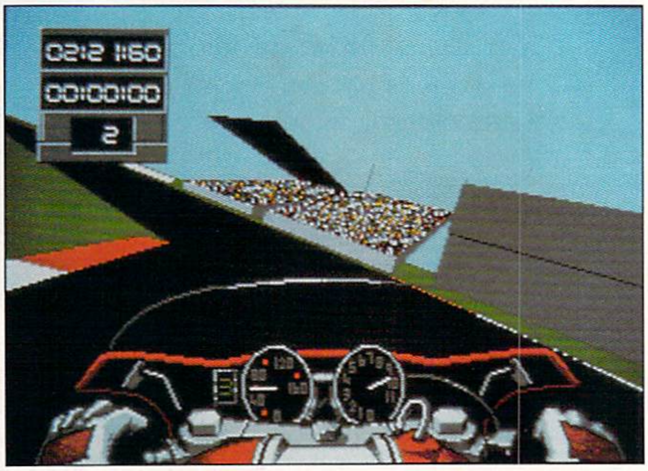
All this action requires some effort on your part, of course. Fortunately, the lowest skill level offers an automatic bike that's easy to control and opponents that don't think they're Carl Fogarty.

This simulation isn't too hi-tech, either. There are no tires, shocks, or other stuff to fool with. To begin competition, just pick a controller (mouse, joystick, or keyboard), one of three bikes, and a practice or race session. That's it!

Don't get me wrong. Team Suzuki is loaded with features: 32 race tracks, complete scoring for a 16-race Grand Prix season, posting of current and best lap times, manually shifted transmissions, and more.

The program requires only 512K, and runs nicely on all unaccelerated Amigas. Sadly, one of its nicest features, animated drivers, slows things down a little too much; it would probably benefit from a faster cpu.

Here are a few race tips: Rookies should start with a practice session at the Donnington Park track; it has gentle curves and long straights, so it's easy and fun to drive. Don't be afraid to drive on the grass; that's the safest way to pass if your percent of damage is low. Use the over-the-shoulder view to check for competitors. Above all, be patient and practice. Team Suzuki is unique and deserves a slot in your gasoline alley. ■



Lean into the turns and step on it for the straightaways.



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NEW **MANY MORE INSTANT CLI COMMANDS -**
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- **AUTOFIRE MANAGER**
From the Action Replay III preference screen you can now set up autofire from 0 to 100%. Just imagine continuous fire power? Joystick 1 and 2 are set separately for that extra advantage!

NEW **IMPROVED RAM EXPANSION SUPPORT.**
Now many more external Ram Expansions will work with all Action Replay III commands.

- **DISKCODER**
With the new "Diskcoder" option you can now 'tag' your disks with a unique code that will prevent the disk from being loaded by anyone else. 'Tagged" disks will only reload when you enter the code. Very useful for security.

NEW **SET MAP -**
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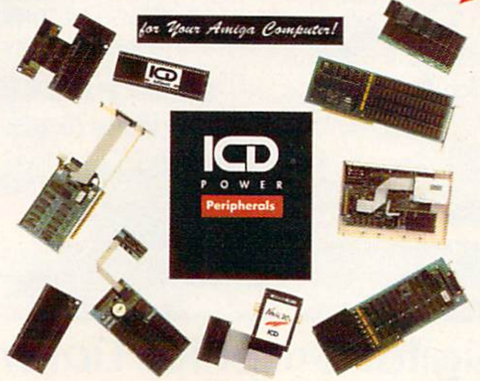
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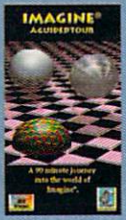
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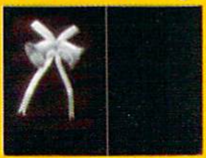
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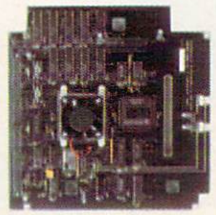
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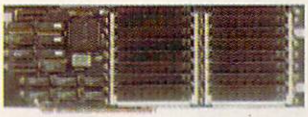
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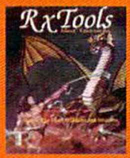
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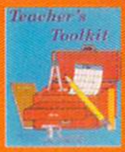


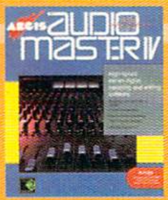
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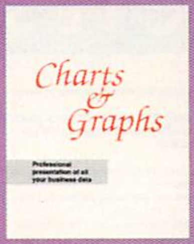


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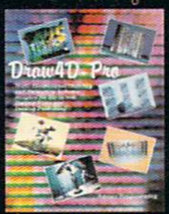


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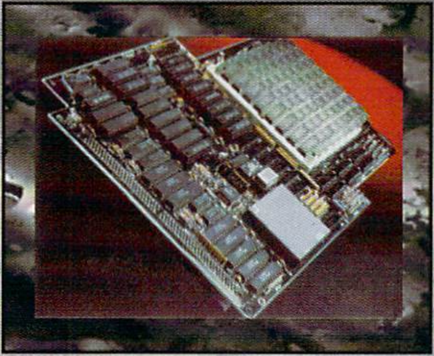
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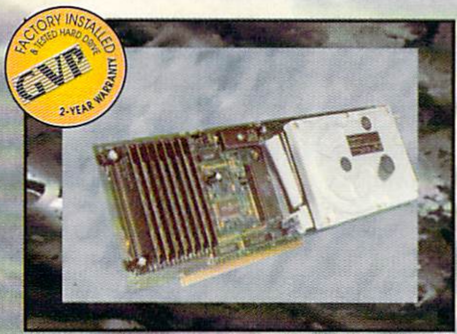
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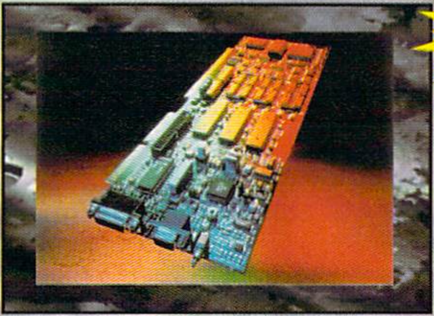
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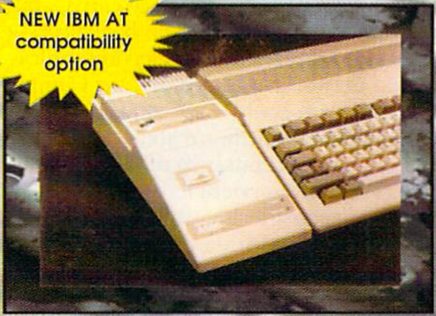


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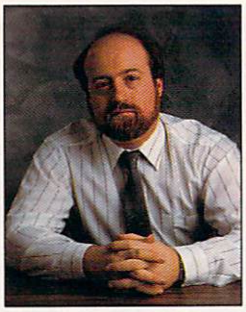
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HELP KEY

Words of wisdom for the ides of March...

By Louis R. Wallace

How SCSI Was He?

Q: *Searching for a one-gigabyte or larger hard disk for my Amiga, I recently found several SCSI drives from Seagate and other developers listed in some magazines. I am not sure these would be compatible with the Amiga's SCSI interface. Do you know if they will work?*

D. Leidy
US Navy

A: You didn't state specifically which drives you are considering buying, so I can't give you absolute assurances that they will work. However, the Amiga SCSI interface is standard SCSI, and Amiga users routinely buy SCSI-based hard disks and removable media from Mac and MS-DOS mail-order companies that work perfectly with Amiga SCSI-interface cards.

In general, as long as the device is standard SCSI and you use one of the more recent SCSI-interface cards, you should be all right. If you have access to one of the national telecommunication networks (GEnie, BIX, or CompuServe), you could leave a message in one of their hardware areas. Then, if some of the thousands of users who access those services have the drive you are considering, they can give you specific information on it.

Wanted: New Driver

Q: *I recently purchased an HP Deskjet 500C printer. The existing HP printer driver (the HP_Deskjet) does not support color, and it supports only the 180-dpi mode of the earlier model. Is there an official printer driver for the HP Deskjet 500C that supports its 300-dpi resolution, internal fonts, densities, and different kinds of media (plain paper, H paper, and transparencies).*

E. Davis Chauviere
Dallas, Texas

A: At this time there is no "official" printer driver for the HP Deskjet 500C. This printer is becoming quite popular, however, and I have seen at least one printer driver for it appear on BIX. By the time you read this, the driver should be available from all the major networks, as well as in most major users'-group libraries. Do keep in mind that it isn't one of the "official" drivers supplied by Commodore. It might work just fine, or it might have one or more bugs, but it's worth a try.

Ghost Computer

Q: *At the Visual Communications Expo in New York City, I was surprised and intrigued to find at the Apple booth an Amiga 2000HD with NewTek's Video Toaster installed and running with a full complement of SONY professional VCRs and laserdisc players. The setup and demos were very impressive. I asked the Apple rep about the Amiga video setup, but he refused to acknowledge that it was an Amiga running the video show. Although the CPU box said Video Toaster on it (not Amiga), it was the Amiga beige color and had an Amiga mouse. Also, I could see it was operating under AmigaDOS 1.3 when it rebooted. The setup I saw was being marketed by True Vision.*

What is going on here? Does Apple have a new relationship with CBM like they do with IBM?

P. Nilsson
New York, New York

A: No, CBM and Apple remain competitors, not partners. What you saw was indeed an Amiga computer system running the video show. NewTek has an OEM agreement with Commodore under which it buys Amiga 2000s, installs a Video Toaster card, sticks a Video Toaster label over the Amiga logo, and sells the system as a Video Toaster workstation. (Some of these systems are running with GVP's 50-MHz 68030 cards and are workstation-level computers.) While the Toaster itself is very impressive, the truth is that the OEM product still relies on the Amiga, its custom chips and operating system, and therefore remains an Amiga in every sense of the word.

NewTek is writing front-end software for the Mac and the PC (under Windows 3.0) that will allow users to connect an Amiga equipped with a Video Toaster to their CPU via a serial, parallel, or SCSI interface. Once so configured, these users can access the Video Toaster's Switcher panel from their Macs or PCs. When a digital video effect is selected on the CPU, it sends a command via the cable to the Amiga, which passes the instruction to the Toaster for execution. At this writing, however, you can control only the Switcher from these front ends; you must still operate other aspects of the Toaster (LightWave, for one) from the Amiga.

Some Amiga users find this marketing approach by NewTek offensive; they see it as an effort to play down the Amiga (which by NewTek's own admission is what makes the Toaster possible). Personally, I don't mind, because no matter what those users think they are doing, we all know they are buying and using an Amiga! And, as a further reality check, remember that the Amiga/Video Toaster combo has gotten so much publicity in the computer, video, and general press that you would almost have had to spend the last year on a desert island not to know that the Video Toaster workstation is, in fact, an Amiga with a Video Toaster card installed. ■

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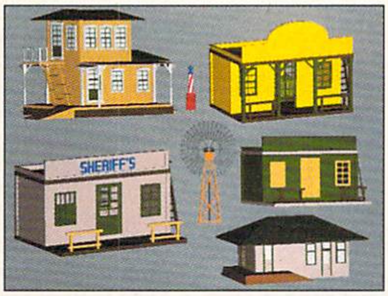
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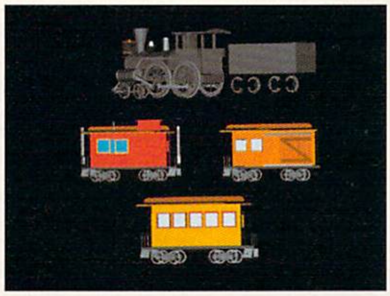
Cyberscape 1.2 generates fractal terrain and saves it as a 3-D object file in either Sculpt 3D /4D, Turbo Silver 3.0, or Lightwave 3D (Video Toaster) format.

Sculpt Terrain 1.0 creates script files for use with Sculpt 4D.

Snackbar #APA5
(Imagine format)

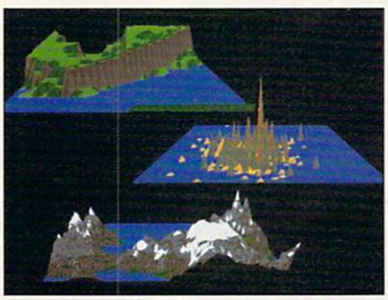
Awning, Chips, CoffeePot, Cola, Cup&Saucer, DogN'Fry, EggsN'Bacon, Fork&Knife, Hamburger, Jukebox, Milkshake, Mustard, Snackbar, Stool













Trains #APA6
(In Sculpt format)

Locomotive2, Caboose, PassengerCar, BaggageCar

Entertainment #APA7
(In Sculpt format)

Banjo, Guitar, Bugle, Piano, Trombone, Trumpet, Violin, Lantern, OilLamp, PotbellyStove, SpinWheel, Stool, Camel, Diver, Spaceman, Jack-In-Box, ToyElephant, ToySoldier

Computers #APA8
(In Sculpt format)

1000Computer, 1000Keyboard, Amiga_Keyboard, 2000Computer, 3000Computer, 3000Tower, 500Computer, Camcorder, Drive&Disk, IBM_PS2, Macintosh, Mac_Keyboard, Monitor, Mouse, Printer, Workstation

Chess #APA9
(In Sculpt and Turbo Silver formats)

Bbishop, Bcastle, Bking, Bknight, Bpawn, Bqueen, Chessboard, Wbishop, Wcastle, Wking, Wknight, Wpawn, Wqueen

Honeybee #APA10
(Imagine format)

Bee, Daisy, Glad (flower), Honeypot, Rose-Full, Rose, Candle1, Candle2, Lantern, OilLamp, WaterPump, WellBrick, Face1, Face2, Lizzie (car), DeliveryTruck

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From p. 23.
constant, in fast or slow, and, finally, the calibration gain, from 00n to 63n.

In the Edit Suite

Clearly, the Kitchen Sync is loaded with features not found in other TBCs in this price range, but how well does it edit? Because of its SVHS inputs, I decided to use an SVHS edit suite with three edit decks that fully utilize SMPTE time code. Here is the basic configuration: The A and B player decks' SVHS video outputs connected directly into the Kitchen Sync's SVHS inputs. I connected the unit's composite outputs directly to the Video Toaster's composite video inputs. Finally, I hooked the Video Toaster's composite output to the recording SVHS deck's composite input.

The first thing I noticed was how easy it was to use the remote-control unit. Having direct access to it makes a big difference in such operations as freezing. With the Kitchen Sync, every function is available from the remote unit. I was able to grab video on the fly and freeze it at will. I even used the remote to make some adjustments with the Kitchen Sync's processing functions, making corrections on color saturation, video levels, hue, and other aspects.

I made all these adjustments on the fly on a WYSIWYG basis. I also used a waveform monitor and vectorscope for more accurate adjustments. One problem that showed up during the edit was a low-light scene that came out too dark. By changing the gain values along with the setup values, I made the scene's subject more visible. Throughout the edit, the unit performed flawlessly and provided a solid video signal. At the end of the session, I made a dub from the master tape. The dub's playback was stable, with just a little bit of signal loss. All in all, the Kitchen Sync did an admirable job in edit.

Over and Out

Concerning the documentation, the technical information is complete and to the point and presented in a highly technical manner. I would like to see more down-to-earth descriptions of all the functions, along with some demos for less video-literate users on how to use the Kitchen Sync's features.

Once again Digital Creations has come up with affordable technology without sacrificing quality. The Kitchen Sync provides a simple solution for synchronizing multiple VCR setups involving the Video Toaster. In addition, the ability to add more channels along with genlock and SVHS outputs makes it a good investment.

For those of you who want absolutely perfect video, The Kitchen Sync is not flawless. On the other hand, it does not carry the $5000 price tag of a higher-end TBC. If you are looking for a high-quality, dual-channel TBC that is more than adequate for industrial and broadcast applications at a reasonable price, The Kitchen Sync just might be for you.

Pixel 3D 2.0

Axiom Software

Better, faster, and some new turns.

By Steven Blaize

3-D OBJECT CREATION just took a giant step forward: **Pixel 3D 2.0** ($129.95, ***Axiom Software***) has markedly improved capabilities in comparison to its popular predecessor, plus a completely new look and feel. In fact, besides the name, about the only thing that remains the same is the concept of the program's use.

Pixel 3D 2.0 requires one megabyte of RAM (Axiom recommends 1.5MB), is relatively simple to install, and comes in versions for both standard and accelerated machines. As before, Pixel 3D converts IFF bitmap files into three-dimensional objects that you can manipulate with such 3-D graphics programs as LightWave (NewTek) and Imagine (Impulse). Pixel 3D still reads IFF files of up to 32 colors (no HAM or 24-bit) in almost any resolution, including SuperBitMaps.



Showing off some of Pixel 3D 2.0's various twists and turns.

The latest version of the program sports a completely redesigned interface, with 3-D shaded buttons that give it a very clean look. The sparse but adequate manual comes with some basic tutorials that are necessary to give you an idea of the many parameters available.

In addition to converting bitmaps, Pixel 3D can load and save 3-D object formats used in LightWave 3D, Imagine, Turbo Silver, 3D Professional, Sculpt-Animate 4D, and Videoscape 3D. It also has a save-only option for DXF (AutoCAD) format, which is commonly used on other platforms.The capability to load objects from one format and save them in another makes Pixel 3D an excellent format conversion tool.

Even more beneficial than its conversion abilities is the program's efficient control over object structure. To illustrate this, consider that while most 3-D objects are created with polygons, some formats use triangles and others render multisided complex polygons. After you load or create an object, you can use Pixel 3D's data-manipulation screen to reduce the number of points and faces. The fewer of these, the shorter the rendering time. As a test, I reduced the number of points and faces of some Imagine objects. Almost every object rendered in less time with little compromise in object quality.

Color Choices

The main feature of the program's first version let you extrude an IFF picture and retain the colors of the original on the faces of the new 3D object. For Pixel 3D 2.0 extrusions, your choices are Standard Color, Mono, Manual Defined, Color Defined 1, and Color Defined 2. Simply use the Config button to set your parameters (see the illustration) before importing a bitmap.

The functions of Standard Color and Mono may seem obvious, but the program's designers added several twists. Mono changes every color other than color zero into an object face, while Standard Color uses each of the other color registers to create face colors. When setting your configuration, you can bevel objects and adjust the bevel for both inset amount and depth, which makes creating beveled text much easier than ever before.

You can also make objects spin about any of the three axis during the extrusion by specifying the axis, its justification, and the amount of offset. To put it very simply, you have the flexibility to create some intriguing objects with just a few button selections.

While you cannot use the bevel or

spin functions with the other three extrusions, they are equally powerful and useful. Manual extrusions allow you to enter extrusion sets. These, one for each color register, define the amount of extrusion for each individual color—such as 100 units for Color 1, 50 for Color 2, and 25 for Color 3.

Color Defined 1 uses an intensity value to control extrusion. For instance, an intensity value of 100 produces an extrusion of 100 units for the largest red, green, and blue values. Full white would be the highest RGB value, and black would be the lowest. RGB values falling in between would be extruded proportionately between 0 and 100. Color Defined 2 extrusions use an average color intensity to control the process.

The entire bitmap is essentially covered with a grid, and you select the size of the sections therein. The RGB values within each section are averaged, and the grid is raised or lowered according to the intensity. The higher the value, the higher the grid section. This is a very useful way to produce topographical objects.

Two line-smoothing algorithms supplement all the extrusion methods. The first uses a straight line and measures the pixel deviation to determine whether to create a straight line or add another vertex. The second measures distances between vertices and eliminates any that are too close. Both can be effective, depending upon the nature of the IFF image.

One of the most outstanding additions to the interface is the object viewer. Once an object is created (or loaded), you can view it from any angle and manipulate it within 3-D space. You can use buttons to rotate the object, zoom in, and even move your perspective. With the cursor, you click on the object and rotate it in real time, and you select whether to view it in wireframe, shaded, or solid mode, or as color models (some modes are mutually exclusive). This feature is quite a time saver; no longer do you have to load objects into a 3-D program just to check out different angles.

OFF TRACK

While Pixel 3D 2.0 is outstanding and definitely on the right track, it is not the ultimate tool for converting 2-D pictures into 3-D. It does have a few snags. I tested version 2.03, which Axiom sent me after I encountered problems with the packaged version. (The update required the return of the original disk and a delay of about a week.) On my 33-MHz, 68030-based machine with nine megabytes, the new version quite rapidly produced simple extrusions that were well under the 1.5 meg recommendation. But numerous attempts with some small SuperBitMaps and even some four-color high-resolution images produced memory-allocation errors.

The memory-configuration requester lets you allocate more memory, which in turn allows the program to create more vertices. This workaround helped, but the objects were unreasonable because of the increased number of points and faces. Subsequent reduction with the data-manipulation parameters sometimes produced erroneous results, such as missing polygons.

Depending on the nature of the image and your desire for line smoothing, the time required for some extrusions is impractical. For a worst-case scenario, I created a side view of a motion picture film reel—a gray circle with five large black circles, three small black circles, and white areas within which I wanted raised ridges.

Next, I used Pixel 3D to import this three-color, high-resolution image as a test for each extrusion method. Standard Color and Mono worked fine in under one minute. Manual Defined took less than a minute, but with undesirable results. With Line Smoothing 2 set to 12, Color Defined 1 took over eight hours and produced unacceptable results. With Line Smoothing 1 set to 8, Color Defined 2 took over 12 hours, with marginal results.

I was also disappointed in my attempts to get technical support. The number listed in the manual referred me to another number, which turned out to be a message machine. The call was returned 30 hours later, but the person was knowledgeable and helpful. I later tried to get more assistance, and when the call was returned two days later to my machine, I was referred to yet another number. *(Editor's note: Axiom told* AmigaWorld *that the company was in the process of moving, and shortly there should be no further disruptions of tech support.)*

Despite these disappointments, Pixel 3D 2.0 does most of what it promises very well and performs many functions not found in other products. While Axiom is a small company, it responds to feedback from users. This upgrade is miles beyond the first release and can assist you in creating exciting new objects.

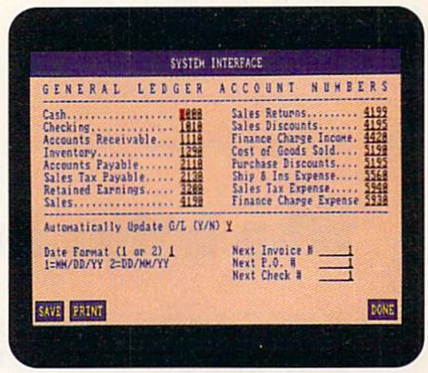
B.E.S.T. BUSINESS MANAGEMENT 3.0

SOFTWARE TECHNOLOGY

Sometimes the best man for the job is software.

By Daniel Greenberg

AS AN ACCOUNTING package, **B.E.S.T. Business Management (BBM) 3.0** goes a long way toward meeting the strict bookkeeping requirements of small- and medium-size businesses. Not only does its track record date back to the Amiga's first days, but it also has proven itself in the MS-DOS and Atari ST communities. Now, this venerable accounting program—originally from B.E.S.T. Software—has been given a tune-up and reissued for the Amiga by ***Software Technology***. The company has priced the package aggressively at $199.95—half of the original cost. While the look and feel of



B.E.S.T. is all business.

BBM is that of a first-generation Amiga product, its performance is as reliable, skillful, and well integrated as any upgrade program.

THE WORKING ACCOUNTANT

BBM offers automatic integration of the main accounting functions; it links a general ledger with accounts receivable, accounts payable, inventory management, and service management. You can access each through a single user interface. With BBM, a single entry into one function appropriately affects the other functions. Every function is called up from a central program that incorporates five main interlocking modules, so there are no confusing subprograms or side modules. What's more, the program updates its databases automatically, checks for balances, credits or debits accounts, and adjusts inventories accordingly. ►

Software Technology claims that its program is simple enough to be used by nonprofessionals, and that is true. Although its screens are not as intuitive as those found in newer packages, the manual does an able job of leading the user through the extensive account-creation process. Once you set up the accounts, managing the transactions is comparatively easy. Additionally, once you declare individual vendor accounts and payment terms, the program performs most entries. This attention to detail is important if you are a small-business owner who wants to spend more time managing your business and less time managing your books.

Output from BBM is simple and straightforward. You can preview printouts with the new Print to Screen function. Though not true WYSIWYG (what you see is what you get), the results are satisfactory. Reports on inventory, accounts-receivable aging, product availability, and year-to-date profitability, and a host of other documents are available, in addition to the more basic income statements and balance sheets. BBM also provides preprinted forms, such as purchase orders, invoices, and checks, for use with the program.

B.E.S.T. Business Management's documentation consists of the original 2.0 manual and a slim 16-page update booklet that covers the 3.0 version. The former contains more than 500 pages of dry, though well explained, instructional material profusely illustrated with black-and-white screen shots and sample printouts.

In addition to presenting a hands-on approach to setting up the computerized accounts, the manual consistently explains exactly how each function works and how each can benefit your business. It even gives business strategies for planning and forecasting.

Taking Care of Business

BBM supplies you with accurate historical data. By giving you speedy access to the size and age of open accounts (how much money is owed and for how long), you can make informed decisions on interest, account limits, and billing methods—without excessive record sorting.

Profit performance is an area that some business owners often misunderstand, mismanage, or totally ignore, yet tight performance management can be a direct source of cash. It allows the manager to decrease outstanding balances and increase overall sales. BBM not only makes it easy to measure the performance of receivables, but it also makes it a high priority.

The same holds true for accounts receivable. Monitoring payment schedules buys managers more than the goodwill of their vendors—it saves cash by maximizing discounts and avoiding penalties. By entering all the discount percentages offered by vendors, BBM aids you in determining your best payment options.

Though not all businesses will need it, BBM also has a good inventory management feature that helps with inventory tracking and performance, so you can beef up your stock of hot sellers and liquidate lagging inventory.

Service management is another area in which some businesses are sorely lacking. Service measures can be difficult to analyze, but BBM makes it easy to set performance objectives and move to services with better profit margins.

Cross-Platform Confusion

Because BBM is available for MS-DOS and Atari ST systems as well as the Amiga, it provides some degree of flexibility to those who move between machine formats. Unfortunately, this multiplatform approach also creates some inconsistencies and nonstandard approaches. The worst result of cross platforming is that BBM does not have the Amiga look and feel: There are no pull-down menus, the scrollbars and requesters are all nonstandard, it is not true WYSIWYG, and it will not work in interlace mode.

The editing commands are rather strange. The cursor keys are used to move between fields, so you cannot use them for data editing. Instead, you must employ an odd shift-cursor key operation, for example, just to move the cursor one text space. Thus, to insert a blank space, you must press SHIFT-DEL. Here, the space bar deletes, and the delete key inserts spaces. This nonstandard interface is BBM's only real shortcoming. You can get used to handling these inconsistencies, but there really is no excuse for them.

Continued on p. 84.

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From p. 80.

There are a few important improvements in BBM 3.0. The process of printing month-to-date and year-to-date aging sales reports has been automated and streamlined. Other changes involve ease of keyboard use and greater flexibility in navigating the nonstandard interface. The most important change is in the way the program handles state tax codes. Earlier versions were very restrictive, forcing you to resort to inelegant work-arounds if your customers paid different tax rates.

Other than the above, BBM performs much as it did in earlier versions. Not many programs can claim that their original releases had that level of functionality.

The Bottom Line

To run BBM, you need 1MB of memory. The program comes on a single, noncopy-protected disk. Hard-disk installation requires a simple procedure and use of the CLI. BBM multitasks and can handle records for up to 1000 accounts and 3000 customers. (A 2MB version is available that can handle double these amounts.) Despite its power, BBM is a small program that you can run even on a single-floppy system without a hard drive.

B.E.S.T Business Management 3.0 is not glitzy or glamorous, but it performs well. It may be straightforward and plain, but it works hard and gets the job done—just like a competent accountant.

Audio Gallery Series

FairBrothers

It's all in how you say it.

By Jeff James

LEARNING A NEW language is rarely easy, but ***FairBrothers*** offers help with **Audio Gallery**, a line of audiovisual foreign language picture dictionaries. The program makes use of the Amiga's excellent sound capabilities and provides digitized voices of native speakers—a most expedient way to learn a foreign language.

Audio Gallery currently supports four languages: two Occidental (German and Spanish, $89.95 each) and two Oriental (Chinese and Japanese, $129.95 each). I chose the German version, using it in conjunction with a traditional college German class I was taking.



Germany can be your oyster if you just learn to speak the language.

Wunderbar

The German version ships with seven disks, a sparse 18-page manual, and a book entitled *Essential German Grammar* (Guy Stern and Everett F. Bleiler). The disks are not copy protected, so making backups and copying the program to my hard disk was straightforward and uneventful. Packed with over 600 digitized words, Audio Gallery German consumes nearly six megabytes when installed—users with small hard disks may need to stick with their floppy drives.

The program begins with the Topics screen, which offers more than two dozen subjects for study. Selecting the Kitchen topic, for example, presents you with a picture of a well-stocked kitchen that has numbers next to the on-screen items. Simply point and click on a number, and the digitized voice of a German speaker pronounces the name of the object selected.

The program's topics range from the mundane (Clothing) to the global (World & Geography), each containing 20 to 40 samples of digitized speech. Options allow you to toggle an English translation of the selected word on and off, adjust the speed at which the word is spoken, and instruct the computer to sequentially pronounce a topic's complete list of words.

In addition to the Topics screen, other features—such as English-to-German and German-to-English dictionaries and unit quizzes—aid in the learning process. The program also provides more specific lessons on the correct pronunciation of the German consonants and vowels.

A Big Eater

Audio Gallery German ran fine on an A500 with Workbench 1.3, as well as on other Amiga models I tested, although I did encounter some problems running the program on an A3000. Running under 1.3 on the A3000, the program frequently crashed. When operating under AmigaDOS 2.04 on the same machine, the program slowed to a lethargic crawl. As it stands now, A3000 owners should steer clear until these problems have been fixed.

Although entirely recognizable, Audio Gallery's 16-color, 640×200 resolution graphics are unsophisticated, and it is quite obvious that the manual was written to serve as general documentation for all Audio Gallery products. True, the program is basically a point-and-click operation, but I think the documentation is inadequate for a $90 software package.

Audio Gallery also has some limitations as a learning tool. It cannot help students form even the most basic of sentences, and lessons on effective German grammar are beyond its reach—probably the reason why *Essential German Grammar* comes included with the software.

Say!

Audio Gallery's greatest strength lies in its ability to reproduce what a word sounds like when properly pronounced by a native speaker of the language. The program excels in this regard, because the digitized speaker is always clear and easy to understand. Audio Gallery seems especially well suited for conversion to Commodore's CDTV, where the immense storage space and clear audio quality of CD-ROM technology would bring out the program's true potential.

Problems with the A3000, sparse documentation, and mediocre graphics aside, Audio Gallery can be an effective learning aid when used in conjunction ►

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with traditional learning methods. The quality of the digitized speech is excellent, and the quizzes available on each topic serve to enhance familiarity with the terms. Audio Gallery cannot replace a structured program in a classroom setting, but it does serve admirably as an accessory learning tool.

Flow 3.0

New Horizons Software

Let it flow, let it flow, let it flow.

By Randy Greenwald

ONE OF THE first products available for the Amiga was an "idea processor" called Flow. Since its release, it has remained unchanged while its younger (and now more popular) brother, the word processor ProWrite, has undergone repeated upgrades. Finally, to the delight of those familiar with its capabilities, ***New Horizons*** now offers **Flow 3.0** ($110)—an upgrade that skips version 2.0 entirely.

Flow is designed to help you organize and manipulate ideas or thoughts in the form of outlines. Although many of us prefer to bypass the outlining stage of composition that we learned in school, if you speak in public or write regularly, you know how important it is to adequately conceptualize the flow and direction of your piece before you deliver it. Flow has many uses, but its primary function is to construct and manipulate outlines.



Flow helps you break down your thoughts into outline form.

Increasing the Flow

Version 3.0 advances the program's basic function to a higher level of performance. It now offers greater flexibility when entering and editing text, and more print options. Flow 3.0 includes a spell checker, lets you add headers and footers to printed documents, and can automatically enter heading labels. What's more, Flow now functions under Workbench 2.0; it operates with any screen option and comes with a flexible ARexx-driven macro capability.

Flow is easy to use and its learning curve is low, particularly to those familiar with ProWrite. You simply enter text as you type, and the program continues under one outline heading or level until you press the Return key. Then, the cursor drops a line, indenting the same amount as the previous line.

If, for example, you were creating a document on how birds fly, you might begin by typing a heading entitled "Physiology of Birds." By simply pressing Return, you could insert another main heading called "Aerodynamics of Flight," at the same level. With Flow's automatic label function selected, you need not label your outline; it would thus far read:

I. Physiology of Birds
II. Aerodynamics of Flight

To add subheadings beneath a main heading, just press Return and then the Tab key to indent. Using this method to add two subheadings—Bone Structure and Wing structure—to the first heading produces an outline that looks like this:

I. Physiology of Birds
  A. Bone structure
  B. Wing Structure
II. Aerodynamics of Flight

Thus far in this example, using Flow has been similar to using a word processor. Beyond this, however, Flow enables you to manipulate the outline to suit the logic of your argument and your own creativity. You can vary the automatic labeling or disable it completely. You can sort and transfer ideas or words between documents, check spelling (though I do not understand why Flow includes just 50,000 words in its dictionary when ProWrite's dictionary provides many more), and even change the color of the screen and text. You can move each thought or idea from one location to another using the mouse—copying, cutting, ►

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and pasting words or entire headings. In addition, the program's ARexx support makes simple macros a breeze.

You can display the outline completely collapsed (to show only the main headings, the subheads being folded up into them), partially collapsed (for working on one portion of the outline at a time), or fully expanded. And you can print the work in any level of expansion. When you finish, you can use the outline as a printed guide or import it into ProWrite, some other word processor, or a text editor.

Full Flow?

It is a pleasure to review a product that delivers what its developer promises. There are, however, some minor aspects that I find bothersome. For example, the product ships with the 1.0 manual and a 3.0 supplement. I think the 3.0 version deserves a revised manual. And while the supplement states that "Flow has a new '3-D' appearance of other New Horizons products," you should not count on it. Flow 3.0 looks like ProWrite 3.0, not the highly touted ProWrite 3.2.

Anyone who develops outlines in Flow and turns them into documents with ProWrite would appreciate more similarity in operation and better integration between the programs. You should not have to change the way you type when moving between two programs from the same company, but cursor movement in Flow matches ProWrite 2.5, not that of current versions. Worse, some important text-deletion capabilities available in ProWrite do not exist in Flow. (When asked about this, New Horizons seemed surprised that they had overlooked these features.) Additionally, Flow's file requesters do not match ProWrite's current standard.

If you want to include a paragraph from a ProWrite document in a Flow outline, you must perform a complicated series of steps—saving and opening unnecessary documents containing the paragraph. Another irritation is that any Flow-generated heading labels disappear when you import a Flow outline into ProWrite or another word processor. A related problem is that sometimes the automatic-label feature forgets at what depth a heading resides, and gives it the wrong label.

Still, Go with Flow

Even with these few oddities, I have found Flow to be imminently useful. Perhaps the program would have a greater following if more people tried it. In the short time I have had Flow, I have used it to compose the outline for sermons (I am a pastor by trade) and to outline a scholarly book I have been reading and trying to comprehend. My children (ages 10 and 11) used it to organize thoughts for a letter-writing school assignment, and as a family we used it to create menus and packing lists for a recent camping trip.

The icing on the cake is New Horizons' customer support, which is among the best I have found anywhere in the Amiga community.

Such versatile and useful tools are rarely found and so easy to use. Even though it is not an essential product (neither is a fax machine or a microwave oven), Flow makes studying, writing, and organizing that much easier. ■

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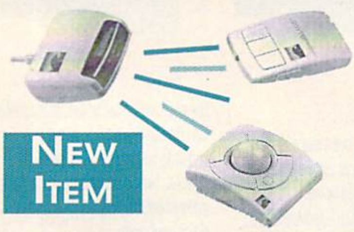
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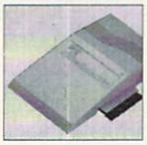


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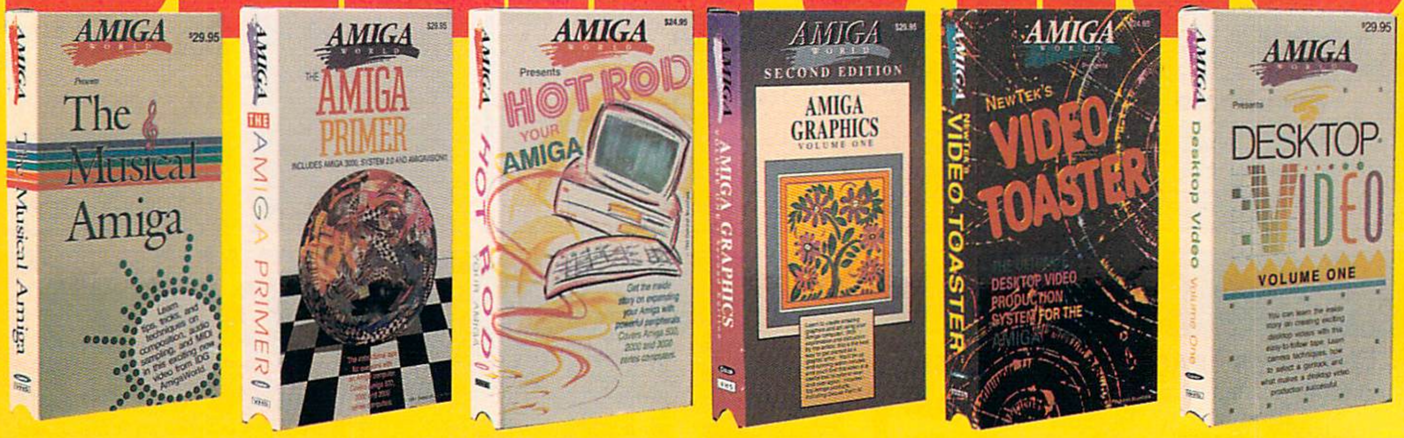
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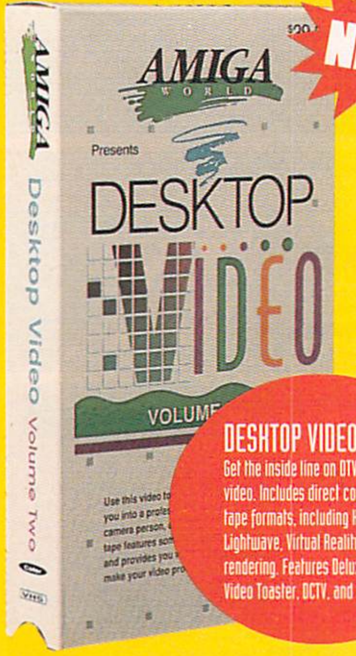
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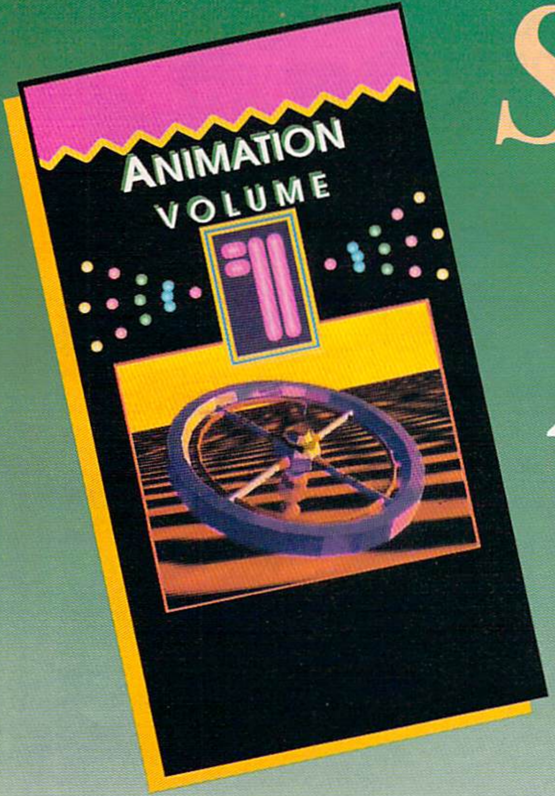
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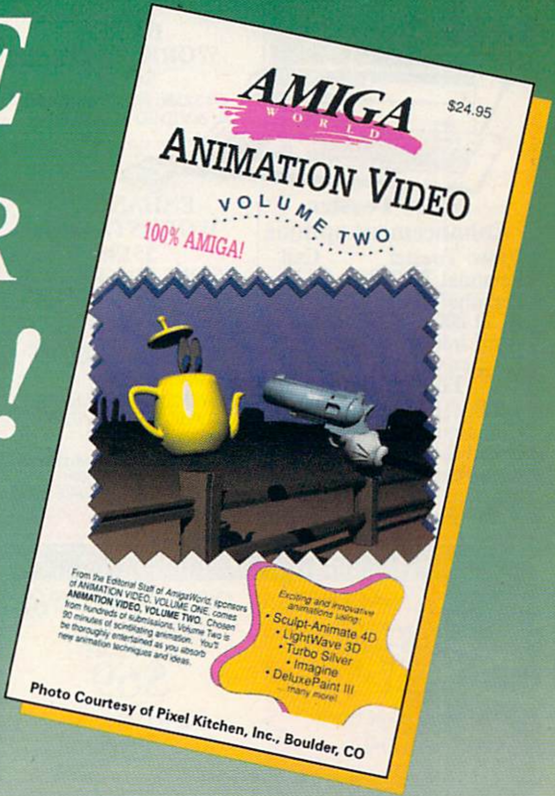
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AW Shucks!

Item: For his article "The Painter's Guide to Structured Drawing" (Feb., p. 35), Eyo Sama used a beta version of Gold Disk's Professional Draw that was tentatively designated 2.1. The company tells us that it has decided not to release version 2.1 in favor of releasing a major upgrade (3.0) to the program at the end of the first quarter of 1992. In the meantime, Gold Disk is still shipping version 2.0. The only features mentioned in Sama's article that are not included in Pro Draw 2.0 are Pantone Color Matching and gradient fills. We hope this will clarify the matter for Pro Draw users.

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DD52: Scientific - Includes Elements - an incredibly well done periodic table program with source, Scientific plotting - over 600k of Lattice C source routines that can be included in your own programs.
DD54: Compression - This disk is loaded with all of the best file compression programs and aids for the Amiga. Many of the programs can be used by the new user. Includes Arc(2.3), Lharc(1.0), Lhwarp(1.03), Pkax(1.0), PowerPacker(2.3a) a must have by all, Zip(1.0), Warp(2.04), and Zoo(2.0). Also IFFcrunch an excellent compression for IFF files.
DD55: ARP - On this disk you will find the complete ArpRel3.0 release including the full user docs, the full Developers guide. ARP is the official AmigaDOS Resource Project (ARP) release 1.3. ARP makes many improvements to AmigaDOS and makes your system easier to use from the CLI.

AmigaDOS
2
Release

It's Here! It's Here!
Release 2.04 of AmigaDOS for the A500/A2000!!! Includes ROMS, disks and full-documentation. Requires installation. U.S. orders only.
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WB105A&B: Workbench 2.0 Extras #2
This set contains the programs that should have been included with WB 2.0. These powerful utilities take full advantage of the *many* new capabilities that are available in Workbench 2.0
Tool Manager - a ***wonderful*** utility to add programs to your TOOL menu, create a collection of icons on the workbench to easily launch frequently used programs...and much, much more! A true must have utility!!!--ALL of our Amigas rely *heavily* on this utility.
Icon - Enhances Workbench's "Show All" to display over 40 distinct icons for different types of files (text, graphic, source files, sound samples, libraries, etc., etc.)
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Wallpaper - put workbench on top of any IFF picture!
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Public Screen Utils - allow several separate programs to share the same screen.
Two disk set, counts as two disks.

DD57: Advanced Utilities - Msh - like Cross-dos, copies files to and from MS-DOS, Pal-NTSC - convert any pal program to NTSC and vice versa, Also several utilities that improve your startup-sequence, plus 25 more programs.
DD62: Basic and Xscheme - Cursor - a full featured Amiga Basic compiler, sbasic and ftext - several wonderful routines to help in basic programers, and Xscheme - an interpreted object oriented language.
DD64: Amiga Programmers Manual - The fully comprehensive Amiga programming manual with source code examples and easy to understand tutorials!
DD65: C Tutorials - Several well done tutorials on how to program the Amiga. Includes tutorials and working examples on device drivers, IFF reads/writes, sound and arcade game implementation, double Buffering, and others. A must have for Amiga Programmers.
DD66: Programming ToolBox - Many programs to help in your development efforts (most for C some for basic) Includes programs to generate requesters, an incredible spritemaker toolbox, to greatly aid compiling, convert DPaint brushes to C structures, a great library manager, and many more wonderful time savers!
DD69:Advanced Utilities - SerNet and ParNet - Connect two Amiga's and share resources, MemMonitor - Similar to WFrag but greatly improved, Selector - put menus on your workbench screen, and more.
DD71A&B:C Compiler - This disk contains DICE, Matthew Dillon's full featured, powerful C compiler and environment system. 2 Disks, counts as 2.
DD72: VT Emulators - Contains three powerful full featured VT emulators, with many advanced features including Kermit, Xmodem and Tektronix protocols. VaxTerm, VLT, and more.
DD77: Fortran - Contains a full featured FORTRAN77 environmental development system. Also contains EzAsm a strongly macro dependent 68000 assembler.
DD78: Menus & System Enhancements - Several neat programs to aid in launching programs from special icons (Next computer style), adding WorkBench menus and more. Also contains many useful programs to determine operation system configuration, memory usage, load and many other important utilizations.
DD79abcd: Amiga C Tutorial - This is the most comprehensive C language, Amiga orientated set of tutorials available. Includes full working examples, source code and an incredible set of lessons. Included are full discussions and examples of every topic on Amiga programming. Four disk set, counts as three.
DD80: VFont System - A font rendering system that extends the Amiga so that it will be able to use vectorized outline fonts. Fast rendering, rotating, and sizing. Use in your own programs!
DD81: ARexx Tutorial - Includes several sample Arexx scripts and sample programs. Also includes APig; a library that gives you access to Intuition from within Arexx scripts.

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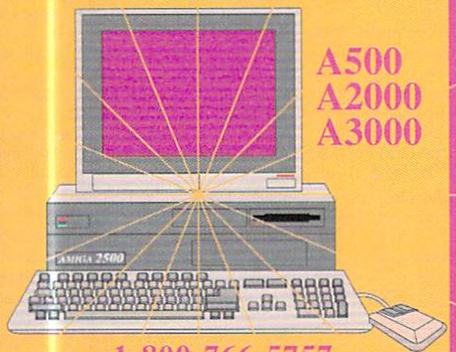
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The Last Word

Kudos, complaints, comments, concerns, and contributions from our readers.

WordPerfect: The Late Lamented

In the past two and a half months, I have invested over $4000 in upgrading from an A1000 to the A3000, as well as in new software. My first 2.0 revelation was to discover that WordPerfect 4.1.11 would not work under this new operating system. A letter to the company's customer support brought both satisfaction and distress: It was good to know that WP 4.1.12 works fine on the 3000, but, according to Mr. Roger Ball (of WP customer support), the company has (again?) dropped all Amiga development. Specifically, there will be no version 5.x for the Amiga.

May I suggest that you send out a most aggressive writer to interview the CEOs of the big software houses, find out just what their position is on Amiga software development, and write a real tell-it-like-it-is article for *AmigaWorld*. Amiga users have both the need and right to know why our machine is so often neglected, and perhaps the high-salaried folks at Commodore need to hear it in plain English as well.

Robert A. Miller
Saudi Arabia

We have heard from another source that the revenues from the Amiga versions of WordPerfect were not deemed sufficient by the company to warrant the expense of developing further upgrades. The company will, however, continue to support the product for present owners.

—Editors

Scientists: Man Your A500s!

Your recent article on scientists using Amigas ("The Scientific Amiga," December, p. 57) was interesting and attention getting, but I was disappointed that it made no mention of the many scientists who use their Amigas every day for the more mundane, yet necessary work involved in statistical analysis and, of course, in word processing.

In fact, a colleague recently brought his data to me for a complex analysis after he found he could not do it on his MS-DOS machine with its expensive software. Using one of my A500s, DOS-2-DOS, and reasonably priced ($149) Lionheart Press statistical software, I quickly completed the analysis. Upon reflection, my colleague concluded he could probably do the same with another $1000 worth of MS-DOS software!

Thanks for stressing that many use the Amiga for work when not playing games, painting pictures, and so on.

Barlow Soper
Louisiana Tech University

Why doesn't Commodore take education more seriously?

A Glowing Example

I am writing to tell you of a very gratifying experience I recently had in dealing with INOVAtronics, the developer of CanDo and Directory Opus. I had ordered an upgrade to CanDo and initially experienced a series of infuriating delays and unkept promises as to delivery. I wrote an irate letter to the president, Martin Murray, and his concern in resolving the difficulty was nothing short of incredible.

Much has been said and written about the poor customer support provided by many of today's software companies. It is indeed special when a company puts forth an extra effort to smooth ruffled feathers and show that it really does value its customers. I feel, as I am sure you do, that such an effort should be recognized and applauded.

Mark C. Hand
Gainesville, Georgia

Mr. Murray not only wrote Mr. Hand a personal letter apologizing for and explaining the delay, but he enclosed—gratis—a copy of Directory Opus.

—Editors

SAT Preparation Woes

I am a high school junior preparing for the SATs. I have looked for an SAT program for my Amiga and have seen them for MS-DOS, the Mac, and even the Apple IIe, but not for the Amiga. Someone actually told me the Apple IIe is better than my Amiga! What is worse is the number of people who have never heard of the Amiga. Why doesn't Commodore take education more seriously and advertise the Amiga?

Keith Degmayr
Bayside, New York

Love That A1000!

My compliments for a job well done on your recent article regarding upgrades for the A1000 ("Reviving Your A1000," December, p. 43). There is a sense that nobody really cares about the 1000 any more, but you proved that sentiment wrong. For those who still own 1000s, it isn't easy to sort out what products are still available that will allow it to perform as well as other Amigas. I'm sure many of your readers would appreciate knowing whether any new hardware product you review is compatible with the 1000.

By the way, Expansion Systems is now shipping a Data Flyer 1000 RAM board and SCSI controller, so there is no longer any need to put those Supra 500 or Data Flyer 500 chassis on the A1000 backwards, as your article suggested.

Tony Hopkins
San Francisco, California

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4	29	54	79	104	129	154	179
5	30	55	80	105	130	155	180
6	31	56	81	106	131	156	181
7	32	57	82	107	132	157	182
8	33	58	83	108	133	158	183
9	34	59	84	109	134	159	184
10	35	60	85	110	135	160	185
11	36	61	86	111	136	161	186
12	37	62	87	112	137	162	187
13	38	63	88	113	138	163	188
14	39	64	89	114	139	164	189
15	40	65	90	115	140	165	190
16	41	66	91	116	141	166	191
17	42	67	92	117	142	167	192
18	43	68	93	118	143	168	193
19	44	69	94	119	144	169	194
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22	47	72	97	122	147	172	197
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17	42	67	92	117	142	167	192
18	43	68	93	118	143	168	193
19	44	69	94	119	144	169	194
20	45	70	95	120	145	170	195
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